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ABSTRACT

Brief analyses are provided of presentations at a conference, held at the University of Central Florida in Orlando, which addressed questions and answers relating to research and education. Conference sessions explored the role of research in relation to educational practices with special focus on theory, research, issues, and application. Papers presented at the conference include: (1)"Qualitative Research: What is It?" (Dorene Doerre Ross); (2) "Perceptual Style: Where Have All the Haptics Gone?" (Donna J. Toler); (3) "What Do Florida Parents, Teachers, and Students Think of Education?" (William D. Hedges); (4) "Teacher Effectiveness: Myths and Realities" (Robert Soar); (5) "What Does Research Have to Say about Teacher Motivation?" (Robert A. Rothberg); (6) "Staff Development and Evaluation Plan for the Direct Instruction Model" (Pam Abrams, Margarette Ackert, Sharon Ralph, Robert Lange); (7) "The Florida Beginning Teacher Program" (Betty Fry); (8) "Two-Factor Leadership Theory: A Myth" (Charles Dziuban, Philip Sciortino); (9) "New Approaches to the Assessment of Children's Intelligence" (David J. Mealor); (10) "A Base for Maximizing Human Potential" (A. T. Wood); and (11) "Classroom Ethnography: The Experience and the Methodology" (Elizabeth Bondy, J. Amos Hatch). (JD)

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ANSWERING QUESTIONS AND QUESTIONING ANSWERS

PART I

UNIVERSITY OF CENTRAL FLORIDA
CONFERENCE PAPERS

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F.E.R.D.C. NOTES ON THIS EDITION

This bulletin is the second series of bulletins produced by F.E.R.D.C. in which the conference proceedings held at one of the nine state universities constitutes the content.

The theme of the conference was "Answering Questions and Questioning Answers." The host institution was the University of Central Florida in Orlando. The conference coordinator was Dr. Sharon Hiett. F.E.R.D.C. wishes to express its appreciation to Dr. Hiett and all those who contributed to the success of the conference, especially those who presented papers which appear in this bulletin.

The proceedings will be printed in two parts, Volume 16, Number 1, and Volume 16, Number 2.

These research bulletins, published as conference papers, represent F.E.R.D.C.'s attempt to serve its member districts and the profession by bringing a variety of research and development information into the schools to be available at minimum cost to the education practitioner.

The constant goal of the organization is to strengthen the bond between school districts and colleges of education for the purpose of providing better education for children and adults.

Charlie T. Council
Executive Secretary

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Tribute

This bulletin and the Conference ANSWERING QUESTIONS AND QUESTIONING ANSWERS are dedicated to the memory of Dr. William E. Breivogel. Dr. Breivogel was an Associate Professor of Education at the University of Florida and former Executive Secretary of the Florida Research and Development Council for over a decade. His work and memory will be with us always.

Preface

University of Central Florida Conference

Answering Questions and Questioning Answers

The Florida Educational Research and Development Council and the College of Education of the University of Central Florida collaborated in presenting a most successful conference which addressed questions and answers relating to research and education.

The conference brought together researchers and practitioners from all educational levels. The format consisted of sessions which were designed to explore the role of research in relation to educational practices with special focus on theory, research, issues and application. It was clearly evident that all participants, including classroom teachers, school and county administrators and teacher educators benefited professionally from personal interaction and from the formal presentations. This bulletin is designed to provide a succinct analysis of the presentations made and should prove to be an excellent reference for professionals interested in research and education.

Dean C. C. Miller
College of Education
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Qualitative Research: What Is It?

Dorene Doerre Ross
University of Florida

In the past decade, educators have become increasingly interested in qualitative research. However, qualitative inquiry about education is still in its infancy and many professional educators are unfamiliar with this research approach. The intent of this article is to explain briefly what qualitative research is and to suggest some kinds of knowledge that might be gained through these research strategies.

What is Qualitative Research?

A general understanding of qualitative research may be gained by comparison with the more familiar quantitative research tradition. While the goal of all research is to expand the breadth and depth of knowledge about the studied area, the purposes, processes and products of quantitative and qualitative research differ. Thus, many argue that qualitative research both supplements and complements knowledge gained through quantitative inquiry.

Eisner (1981) defines quantitative research (or scientific research in his terminology) as:

> inquiries that use formal instruments as the primary basis for data collection, that transform the data collected into numerical indices of one kind or another, and that attempt to generalize in a formal way to some universe beyond itself. (p. 5)

The purpose of quantitative research, then, is the development of laws and generalizations that will apply across settings and participants. To accomplish this, research processes or techniques are used to assure the collection of reliable and valid data from a representative population using replicable methods.

In contrast, the purpose of qualitative research is to provide descriptions and explanations of experiences within a cultural (in this case, educational) setting based upon the assumption that a compre-

hensive understanding of one setting clarifies theoretical constructs and discloses patterns of experience that will facilitate the understanding of other settings or experiences. That is, the goal is not the prediction of behavior across settings but the explanation of the meaning of behavior and experiences to participants within a given setting.

Qualitative research methods. The qualitative study of an educational setting requires the collection of a large quantity and great variety of information. The various research techniques associated with anthropological studies provide a systematic and disciplined way of collecting that information. In a current review of qualitative studies Ross and Kyle (1982) indicate that observation, interviewing and the collection of artifacts are the predominant research strategies used. Some researchers also supplement this qualitative data with quantitative data collected through the use of questionnaires or observation instruments. The ethnographic processes of observation, interviewing and the collection of artifacts each will be discussed briefly to clarify the types of research techniques used by qualitative researchers.

Through observation, the researcher gains information about ongoing processes in an educational setting. Observation can be recorded in several ways, (e. g., field notes, on audio or video tape, in photographs or slides); however, the predominant method for recording observations is the use of field notes, a systematic method for recording observations (Glaser & Strauss, 1970:291). In field notes the observer maintains a running account of events, noting the people involved, the general atmosphere, specific verbal interaction and anything else which contributes to an understanding of the setting. Observations may be guided by foreshadowed problems (Malinowski, 1922:9); that is, pre-determined questions one wishes to answer, or by emergent questions (McCutcheon, 1976: 36-7); that is, questions that arise out of the experience. These questions help focus the observations but should not pre-determine the content of the final report. A search for counter evidence relevant to all emergent interpretations helps to ensure the final report will reflect the observed phenomena and not the foreshadowed questions or biases of the researcher.

Interviewing participants in the educational setting is another potential source of information. The researcher may develop a formal questionnaire to be used with certain people in order to obtain parallel information across them. Additionally throughout the observation process the researcher interviews participants informally to increase his/her understanding of people's actions and the reasons behind them.

The ability to determine the accuracy of verbal accounts is important. Dean and Whyte (1957:36-7) and Becker and Geer (1970) stress that the researcher should compare observed behavior to verbal information to note any discrepancies. These discrepancies should then guide observations and interviews. Additionally, Williams (1976:27-8) suggests the researchers should ask the same questions many ways to compare answers and try to be aware of and minimize any possible impediments to honesty. In this way, the researcher can assess and try to increase the accuracy of information gained through the interviewing process.

The third information collection process to be discussed is the collection of artifacts. In educational settings this might include such things as children's work, tests, teachers' plan books, administrative mandates, or basic skills lists. The researcher collects or examines these educational "things" to understand better the multiple aspects of any educational setting.

Interpretation of qualitative data. The collection and interpretation of data are concurrent and cyclical processes. The researcher continuously forms interpretations to try to fit all the pieces of information into some coherent pattern or combination of patterns. He/she also can interpret to try to establish the meaning of those patterns to people within the setting (e. g., teachers, children, parents) and to those outside it (e. g., the researcher, educational theorists and school personnel in other parts of the country). Additionally, the researcher makes an interpretative analysis of the relationship between setting patterns and external factors such as parental influence or legislative mandates. Finally, as the researcher makes and communicates interpretations, he/she should make explicit the connections with other studies and with existing theoretical

constructs in order to facilitate the building and elaboration of educational and social theories. A comprehensive discussion of interpretation and analysis is not possible here. The article in this issue by Bondy and Hatch provides more detailed information about both information collection and analysis. Interested readers also are referred to Bogdan and Taylor (1975), McCall and Simmons (1979), McCutcheon (1981), and Spradley (1979; 1980).

What Can Be Learned Through Qualitative Research?

The remainder of this article will focus on the kinds of topics, questions and findings one might find in qualitative studies. Recently, a colleague and I reviewed 51 qualitative studies presented at the American Educational Research Association from 1977 through 1980 (Ross & Kyle, 1982). Our findings suggest that five major topic areas are being investigated. Each area and a sample study will be described. The goal is to give the reader a sense of the nature of qualitative questions and to facilitate a better understanding of the potential contribution of qualitative research.

Studies of how educational institutions deal with change. Researchers have posed questions about how new ideas are put into practice, how school systems cope with mandated changes and what factors constrain educational change. For example, Kritek (1979) investigated the concerns of teachers facing desegregation and how they dealt with these concerns. He documented new problems teachers had to face such as children who have a long bus ride to school, unfamiliar classroom behaviors, an increased turnover rate and an increase in the range of achievement levels. His 8½ month ethnographic study provides an explanation for changes in teachers' classroom behaviors and for a philosophical shift in the importance assigned to discipline and order after desegregation. By targeting areas of concern, Kritek's study suggests possible foci for inservice training for other teachers facing desegregation.

Studies of educational roles. In this category are descriptions of the roles of various educators, analysis of the development of roles or the differences among roles in a setting, and descriptions of participants'

perceptions of various roles. Tabachnick, Popkewitz and Zeichner's (1979) study provides an illustrative example. This study explored student teachers' developing beliefs about themselves as teachers and examined students' actions in assuming the role of teacher in classrooms. The researchers interviewed and observed student teachers and observed representative seminars and student conferences with university supervisors during a 16 week semester. They found that student teachers believed their role consisted of the fairly routine, mechanistic teaching of skills and the development of the management skills necessary to keep children quiet and orderly. Of potential concern to teacher educators was their finding that university supervisors subtly encouraged students to adopt this role and model their cooperating teachers by focusing conference and seminar discussions on procedural and management issues as opposed to substantive concerns such as what and how children should learn.

Studies of schools as mechanisms for social control. Researchers have studied how teachers and students from different cultures or social status interact, the problems that occur during such interactions and the ways students, school systems and teachers adapt or fail to adapt. They also have looked at how school practices such as the selection of content or the use of a tracking system influence various participants in the setting. Pink (1979) studied teachers' views of the purpose of a tracking system and the effect of tracking on student attitudes, behavior and opportunity. Pink combined one year of ethnographic observation and interviewing with quantitative data from student questionnaires to develop his conclusions. The teachers in his study did not see tracking as a mechanism for controlling student behavior and attitudes, but rather, believed it was a way to deal with the variety of student ability levels. However, observations in classrooms, interviews with students and questionnaire data indicated that tracking does serve as a means of social control for students. In fact, Pink concluded "experiences resultant from track placement are sufficiently different as to shape and mold student (a) self-esteem, (b) friendship patterns, (c) performance, and (d) expectations about both educational and occupational options (p. 10-11)." His study suggests that teachers need to be more sensitive to the effects of tracking systems so that schools can function to maximize educational opportunities for all students.

Studies of classroom processes. Studies in this category focus on the dynamics of classroom interactions. Researchers address such questions as: 1) Do student teachers adapt their behavior to children and the classroom environment? 2) What teaching practices are effective and what factors contribute to effectiveness? and 3) What differences exist in student and teacher behavior in different instructional settings? One such study was done by Shultz (1977). Shultz analyzed a 6-minute video-tape (selected after conducting ongoing ethnographic observations in a classroom) to study social interaction in a kindergarten classroom. Specifically, he was interested in how children figure out what behavior is appropriate within different classroom contexts and how teachers form impressions about the social competence of their students. The study focused on a kindergarten child, whom the teacher had identified as dependent and "not a leader," characteristics the research team had not noticed in other settings. By comparing this child's behavior with the behavior of a child judged to be socially competent by the teacher, Shultz documented the importance of the timing of comments during instructional tasks as a reflection of classroom competence. For example, Shultz found that conversational statements are acceptable to the teacher during the "set up" period of an instructional game but not during the "serious" playing of the game. The inability of the target child to make this distinction was a major factor in the teacher's perceptions of her behavior. Shultz's study provides some needed insights into how social interaction affects social adjustment, a previously unstudied, but perhaps significant factor affecting classroom life.

Studies of teachers as decision-makers. In this category are descriptions of the variety of decisions involved in teaching and explanations of the reasons behind the decisions teachers make. For example, McCutcheon & Kyle (1979) investigated how elementary teachers plan their courses. This collaborative study with 12 elementary teachers involved 5 months of ethnographic observation and interviewing, the review of teachers' journals, texts, memos, planbooks and other relevant items. The researchers found that planning was a relatively complex and varied process. Rather than relying on the rational planning model taught in most teacher education programs, teachers planned differently, depending on the subject area. Planning

was generally a short-term process, as long range planning was provided by texts and curriculum guides. The researchers also identified mental planning as a "new" type of planning that deserves the consideration of theorists and other researchers, and discussed a variety of influences on planning, such as teacher education programs, teacher isolation, teacher knowledge, and administrative policies. This study has direct implications for teacher educators interested in helping preservice and inservice teachers develop better planning strategies.

Summary

In summary, it seems useful to characterize both the types of questions posed by qualitative researchers and the findings from such studies. Qualitative questions are broad and general. One will not find statements of hypotheses or behavioral pre-definition of variables. Instead the researcher poses a general question to facilitate the search for defining attributes, patterns of behavior, the social meaning of events and the relationships among events.

Finally, there seem to be five general kinds of information which might be provided by qualitiative research. These include:

1) the description of educational contexts, to note educationally relevant differences and to develop concepts and constructs to explain those differences

2) the identification and development of an understanding of the meaning, complexity and relationships among educational variables

3) the generation and elaboration of hypotheses and theories

4) the development of support, explanations or perhaps refutations of theoretical concepts and findings from other research studies, both qualitative and quantitative

5) the examination of concepts and variables not easily quantifiable.

The examples that have been provided illustrate the nature of qualitative inquiry. By providing descriptions and explanations of cultural settings, qualitative researchers strive to complement and perhaps provide some explanations for the findings from quantitative research projects. It is important to stress that no one research paradigm will provide answers to all of our questions. Only through the use of both research paradigms will we have access to multiple perspectives about educational issues, thereby increasing the breadth and depth of knowledge about the topics under study.

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Perceptual Style: Where Have All The Haptics Gone?

Donna J. Toler
University of Central Florida

A number of researchers such as Dunn (1979), Cronbach (1967), Gagne (1967) Salomon (1970), and Snow (1968 and 1970), have pointed out the need to explore individual differences in learning style. The ultimate aim of such research can be stated as follows:

> Assuming that a certain set of outcomes from an educational program is desired and considering any particular instructional treatment, *in what manner do the characteristics of learners affect the extent to which they attain the outcomes from each of the treatments that might be considered? Or considering a particular learner, which treatment is best for him?*
>
> (Snow, 1970)

The main groupings of aptitudes which can be identified and which may affect learning include intelligence, personality and interests, and cognitive styles. Of the three groups, the last — cognitive styles — is the newest and least defined.

Several areas of cognitive style which have been identified appear to be directly related to the design and development of instructional materials. The first is *differentiation*, also known as *field-dependence* and *field-independence*. Differentiation is concerned with the ability of the learner to isolate a figure against a distracting background. The field independent person tends to easily differentiate objects from their backgrounds, while the field dependent person tends to experience events and things globally in an undifferentiated fashion (Witkin, 1962).

Another area of cognitive style of interest is referred to as *leveling-sharpening* (Gardner, Jackson & Messick, 1960). This area of cognitive style concerns individual variations in memory. Persons in

the leveling extreme tend to blur similar but not identical memories; differences in remembering objects tend to be lost. Sharpeners, at the other extreme, are less prone to confuse similar objects and may even magnify small differences in their minds.

While over twenty different cognitive style dimensions have been identified, most of them are relatively unexplored (Messick, 1976). One such area is that of *perceptual style*. This variable was identified in extensive research originating with art educator Viktor Lowenfeld. Lowenfeld does not believe that visual perception is the same process for all individuals or that the formation of visual images is necessary for learning to occur. Instead he conceptualized individual differences in perceptual style by the way visual stimuli are reacted to and processed. Lowenfeld demonstrated the existence of "two distinct creative types, based upon two unlike reactions to the world of experience" (Lowenfeld, 1945).

Lowenfeld discovered the two perceptual types while working with the visually impaired. He noticed that while some partially blind students were content to rely on the sense of touch when modeling with clay, others who were partially blind needed to examine objects with what limited sight they possessed. This led to further work with normal populations where he found similar tendencies. Lowenfeld called these two perceptual types *haptics* and *visuals*.

Visuals use their eyes as the main intermediaries for their sense impressions. An extreme visual is one who would be totally lost in the dark, depending completely on his sight to perceive the outside world. The visual tends to transform kinesthetic and tactile experiences into visual ones. The visual type learns through visual imagery and is perceptually an observer, usually approaching things from their appearance, and acquainting self with environment via the eyes (Ausburn, 1979).

Haptics, on the other hand, although possessing normal vision, do not use their eyes, but rather, rely on other senses and kinesthetic experiences to perceive their world. The extreme haptic uses his eyes only when compelled to do so; otherwise he reacts as would a blind person who is entirely dependent upon touch and kinesthesis. The

haptic is a subjective type who tends to feel experiences physically rather than to see them (Ausburn, 1979).

These two perceptual types can be thought of theoretically at opposite ends of a continuum with most people falling somewhere in between. In repeated testing, however, Lowenfeld found that in 75% of the population there is "an appreciable tendency toward the one or the other" (Lowenfeld, 1945). In fact, other researchers (Ausburn, 1975; Walter, 1963; Erickson, 1964 and 1969; Butzow and Schlenker, 1980) have all obtained similar distributions. About 50% of the population tends to be classified as *visuals*, 25% are classified as *haptics*, and the other 25% fall somewhere in between and are classified as *indeterminate*.

Among the research efforts supporting the Lowenfeld theory is that of brain researchers Drewes (1958) and Walter (1963) who assert that the difference in perceptual type may be physiological. Drewes studied brain alpha rhythms using an electroencephalograph. Subjects were asked to visually manipulate geometric figures to form various combinations on a table top. Drewes concluded that those who had constant alpha rhythms were not forming visual images, while those with little or no alphas were constantly producing mental imagery.

This was supported in a later study by Walter who reported that those individuals with persistent alpha rhythms — hard to block with mental effort — tended to prefer tactile and kinesthetic perceptions rather than visual imagery. Walter distinguished between the "non-visualizer" with persistent alpha activity and the "visualizer" with little alpha activity, and the "mixed type." The distribution of these types is not significantly different from the distribution of visuals, haptics and indeterminates reported by Lowenfeld.

Lowenfeld developed a battery of five tests for determining the perceptual type of individuals. Some of these tests are concerned with an ability to do something, others with the manner in which a task is done. The five tests are as follows:

1. *Test of Integration of Successive Impressions*. This deals with the

individual's ability to synthesize parts into a whole. A symbol is shown moving behind a narrow slot. Only a small section of the symbol can be seen at one time. After the whole symbol has passed behind the slot, the subject is asked to recognize the correct symbol out of several similar figures. Visuals score higher than haptics since they generally possess the ability to integrate partial impressions into a whole.

2. *Test of Subjective Impressions*. There are two forms of this test. In the first form, the subject is asked to draw a glass of water and/or a chessboard on a table. Visuals tend to draw a table with a top and legs while haptics draw the object ignoring perspective and relating themselves to the objects on the table.

The alternate form of this test asks subjects to think of a familiar building, to estimate the number of floors in the building, and then to report how he arrived at the conclusion. A haptic individual usually imagines himself physically climbing the floors, while a visual reports looking at the whole building from the outside and mentally counting the floors he sees.

3. *Test of Visual and Haptical Word Associations*. Given a list of 20 words which elicit responses from both visuals and haptics, subjects are asked to write their immediate reactions to each word. Responses are classified as visual when they show a reaction to the environment such as "climb *a mountain*." Responses are classified as haptical when they express actions or feelings such as "climb *hard*."

4. *Visualization of Kinesthetic Experience*. In this test the subject is blindfolded and traces a plywood geometric figure with one finger while keeping one finger of the other hand at the starting point. The blindfold is then removed, and the subject is asked to visually recognize the figure he has just felt. Visuals score higher than haptics.

5. *Test of Tactile Impressions*. Wooden or cardboard geometric figures replaced inside a bag. While several test figures are presented, the subject manipulates the object in his hand and selects the correct figure before him.

Although the last two tests are seldom administered because they are considered to be irrelevant and unreliable and are now virtually unobtainable, the other three are often used either alone or in series to determine perceptual type. The Test of Integration of Successive Impressions has been made into film form by the Army Air Corps and Lowenfeld and is called Successive Perception Test I (SPT—1).

What research efforts have been made using perceptual type as a variable? Lowenfeld showed that the two types produce significantly different kinds of art work with visuals tending to produce visually oriented, externally directed work that attempts to capture visual reality. Works by haptics tend toward an internally directed approach with subjective use of elements such as perspective and proportion.

Several studies have attempted to measure possible correlates between visual or haptic dominance and school achievement. Erickson (1964) measured the relationship between perceptual type and mechanical drawing ability and found that visual types showed superior performance in mechanical drawing. In a later study, Erickson (1969) investigated the relationship between perceptual type and the development of reading skills and concluded that "the mean reading level of reading achievement for non-visual or haptically inclined students is likely to be from one-half to one full grade level below their visually oriented classmates at the seventh grade level. In another study, Bruning (1975) found significant correlations between high visual ability and achievement in both reading and math among high school students.

Another area of exploration for researchers has been the relationship between media attributes and perceptual style. Floyd Ausburn (1975) examined the relationship between perceptual type and presentation mode -- single, sequential, linear imagery and multiple, simultaneous imagery. He found that visuals scored higher than haptics in both treatments on a visual location task, and that simultaneous imagery assisted both visuals and haptics, but particularly the haptic who was able to use the simultaneous presentation mode to supplant the mental imagery task.

A similar study by this writer showed that visuals scored significantly

higher on a visual discrimination task than did haptics. Simultaneous presentation of images assisted both perceptual types when visual discrimination was difficult, but it did not assist the haptic any more than the visual as it had in the Ausburn study. However, an interesting but unexpected finding came out of this study which was conducted in 1978. The distribution of the three perceptual types differed significantly from that of other studies. Of over 200 subjects tested, 24% were identified as visuals, 22% as haptics, and 54% as indeterminates. While Lowenfeld felt that perceptual type was firmly established by the age of 12, all participants in this study were over 12 years of age. This caused the researcher to question the testing instruments as well as the very nature of perceptual style. Is it learned? Inherited? Developmental? Physiological?

A recent study by Butzow and Schlenker (1980) explored the relationship between Lowenfeld's perceptual aptitude theory and Piaget's developmental theory. Subjects were found to segregate into these four categories: haptic-concrete, 26%; visual-concrete, 23%; haptic-formal, 16%; visual-formal, 35%. There was a general linear trend linking perceptual type and logical ability, but it was suggested that further work needs to be done to investigate changes in the relationship as adolescents undergo major changes in logical thinking. Implications of the visual-haptic research for teachers in this study are that visuals excel at visual tasks while haptics need assistance in processing visual information. It may be that perceptual growth is a precursor to logical growth. For example, "...a learner would need to have the aptitude and interest to notice which sides of a rectangular solid are unique before the volume of the solid could be calculated from measured quantities" (Butzow and Schlenker, 1980). These researchers also suggested that students who are easily confused by details of visual stimuli are those who fail to become more logical as a result of experience with their environment.

An attempt was made recently by this writer and two graduate assistants to replicate an earlier study (Toler, 1979) with College of Education majors rather than the seventh and eighth grade students who had been used earlier. It was this research which led to the title of this paper, "Where Have All the Haptics Gone?" The distribution was very unusual. Thirty-one percent were determined to be visual in

perceptual type, 64% were indeterminates, and only 5% were determined to be haptics. Because such a small number of haptics were found, the research began to move in new directions. Could it be, for example, that visuals are college bound while haptics gravitate toward more "kinesthetic" learning and working environments? Are visuals more adept at traditional classroom instruction, better achievers, less behavior problems? Do we reward the visuals in our schools and penalize the haptics?

Because the theme of the FERDC conference has to do with "answering questions and questioning answers," allow me to set forth some other questions for future research:

At what other specific tasks do visual types excel?

Are there specific tasks at which the haptic perceptual type succeeds when the visual cannot?

Have today's pervasive visual media affected the development of perceptual type?

Does the current emphasis on visual learning and visual literacy in our schools affect perceptual type?

Does perceptual type vary throughout one's life?

Can we train the visual and the haptical abilities of students? Should we if we are able?

Is perceptual type related to any other individual difference or cognitive style? Does perceptual type influence directly or indirectly vocational preference?

Are there, in fact, two parallel continuums? In other words could an individual score high on haptic and visual processing ability? Or could one individual score low in both?
Are the testing instruments adequate?

And finally, where HAVE all the haptics gone?

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What Do Florida Parents, Teachers, and Students Think of Education?

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This study investigated whether the attitudes towards education of parents, teachers, and students differ in high and low achieving Florida secondary schools. Specifically, it was hypothesized that the attitudes of the three groups evidenced more unanimity in the high achieving schools than in the low achieving schools. For the purpose of this study, high achieving secondary schools (HAS) were defined as those Florida high schools that earned a school score above one standard deviation above the mean on the 1979 Florida 11th Grade Statewide Literacy Test; low achieving schools (LAS) earned below one standard deviation below the mean.

Forty of 52 eligible schools agreed to participate in the study as follows:

HIGH ACHIEVING			LOW ACHIEVING		
N	=	21	N	=	19
MEAN	=	90.8	MEAN	=	46.8
S. D.	=	3.6	S. D.	=	14.1

State Literacy Test Scores

The faculty in the 40 schools totaled 2,520. Each of these received the PARENT OPINION INVENTORY. This inventory is published by the NATIONAL STUDY OF SCHOOL EVALUATION, 2201 Wilson Blvd., Arlington, Virginia 22201.

The same number of student and parent questionnaires as teacher questionnaires went to each school. Thus, if a school had 100 faculty, it received 100 STUDENT OPINION INVENTORIES and 100 PARENT OPINION INVENTORIES.

A microcomputer program generated directions for each teacher to select one student and one parent to avoid bias in teacher selection. An example of this program is below:

> PLEASE GIVE THE STUDENT INVENTORY TO THE FIFTH STUDENT IN ALPHABET ORDER IN YOUR THIRD CLASS OF THE DAY.
> PLEASE GIVE THE PARENT INVENTORY TO THE THIRTEENTH STUDENT, IN REVERSE ALPHABETIC ORDER IN YOUR LAST CLASS OF THE DAY. HE/SHE IS TO TAKE IT HOME AND RETURN IT.

The design used was the EXTREME GROUPS RESEARCH design described in FUNDAMENTALS OF EXPERIMENTAL DESIGN, 3rd Ed., by Jerome L. Meyers, Allyn and Bacon, p. 158. This design compensates for the elimination of the large middle group of students and discounts the increased possibility of significance.

Returns From 2,520 Parents, 2,520 Teachers, 2,520 Students

	Parent	Teacher	Student	Total
High	740	880	820	2440
Low	593	739	700	2032
Total	1333	1619	1520	4472
Percent	52.9%	64.2%	60.3%	59.2%

It might appear from the above that a slightly higher percentage of the high achieving schools sent returns; however, keep in mind that 21 schools were high and 19 low. Hence while NUMBER OF RETURNS was higher, PERCENTAGES WERE ABOUT THE SAME.

Findings Of The Study:

A. PARENTS: Attitudes of parents in HAS differed significantly from parents in low achieving groups on only four items, i.e., students in HAS are considered more respectful of one another than students in LAS, are thought to have better working relationships with teachers, and are thought to have poorer counseling. Also, the school is deemed somewhat more safe from outsiders in the HAS.

The parents in both groups were most positive about five of their six most positive responses, i.e., adequacy of teaching basic skills, adequacy of physical education programs, appropriateness of length of class periods, the educational value of school activities, and the reasonableness of school rules and regulations.

On the most negative responses, parents of the high and low achieving schools agreed on four of their lowest six, i.e., on drugs being a problem, cheating being a problem, student absenteeism being a problem and students not enjoying school lunches.

B. TEACHERS Teachers in HAS differed significantly (.05) from teachers in LAS on ten items, i.e., LAS students seem to be learning less than they might, curriculum is less relevant for students in LAS, LAS students work less than they should, teachers have less freedom in methodology in LAS, too few students in LAS participate in extra-curricular activities, LAS students have sufficient money to participate in extracurricular activities, LAS students have sufficient money to participate in school activities, too few LAS students feel they belong, teachers in LAS feel they are more receptive of parental visits to class, teachers in LAS are more dissatisfied with their schools, and too little sex education in LAS.

The faculty in both groups checked five of the six same items as most positive, i.e., amount of freedom in choosing teaching methods, degree of welcoming parents to visit classes, amount of help from administrators with discipline and appropriateness of number of instructional periods.

On the negative side, teachers agreed on five of the six, i.e., lack of acquaintanceship of teachers with parents, inadequacy of drug education, inadequacy of sex education, inadequacy of school emphasis in teaching students learning how to learn and inadequacy of individualized instruction.

STUDENTS: Students in HAS differed significantly (.05) from students in LAS on only three items, i.e., students in HAS involved far more in planning school activities, faculty in HAS apparently far more willing to give students individual help outside of class and students in LAS feel what they are learning is more useful to them in later life than do the students in HAS.

The students in both groups were most positive about four of their first six most positive items, i.e., feelings of belonging, teachers seeming to care that the students learn, teachers giving enough help and teachers usually explaining assignments clearly. I THINK THIS POSITIVE REPORT CARD BY STUDENTS SHOULD ENCOURAGE MANY TEACHERS.

On the negative side, students were negative about five of the six same items, i.e., not being able to participate enough in school activities, not getting enough help from the school counselor in solving personal problems, not being involved adequately by administration in decisions that affect them such as dress code and assemblies, not enough personal encouragement from administration on school work and not being talked to as individuals by administration.

CONCLUSIONS: Let us now go back to the questions raised at the onset of this study.

1. Do the attitudes toward education of parents in high achieving Florida High Schools differ from the attitudes of parents in low achieving Florida High Schools – on educational issues?

The answer to this is NO; the attitudes seem essentially identical.

2. What about teacher attitudes? Here the answer is somewhat mixed. Teacher attitudes differ on 12 of the 64 items.

3. What about student attitudes? No.

4. Is there more unanimity in HAS than in LAS parent responses? No.

5. Is there more unanimity in HAS than in LAS teacher responses? Mixed.

6. Is there more unanimity in HAS than in LAS student responses? No.

7. Is there greater congruence among parents, teachers and

students in HAS than in LAS schools? The answer to this is a very strong NO.

What then can we say about the curriculum theory of greater unanimity between parents, between teachers, and between students in HAS than in LAS?

One must say that this is NOT the case using as a measure of school quality the criterion of the Florida State Literacy Test. Parents, students, and to a lesser extent teachers, do not seem to respond any differently in high achieving than in low achieving schools.

What does this mean? One possibility is that these groups are obtuse and insensitive — a conclusion I reject. Another possibility is that the test is not an adequate indicator — a criterion — of school quality. There must be other indicators.

This study, in short, strongly supports the inadequacy of such an instrument as the Florida State Literacy Test as an indicator of the quality of high school programs in Florida.

RECOMMENDATIONS: The State of Florida should broaden its list of criteria of school quality far beyond the publishing of single scores by school on the Florida State Literacy Test. It would seem factors other than such test scores are serving in the minds of parents, teachers, and students as indicators of school quality.

Should professional educators not be made aware of such other criteria and should not performance on such indicators be obtained as well? In short, the narrowness of the criterion of a school's test score as indicative of much of anything is questioned.

The overall ratings of the two groups of schools were not only much different, but also were primarily positive in nature. It would therefore also raise the question of whether the presumed lack of faith in the quality of Florida schools being attributed to parents is indeed the case.

Teacher Effectiveness: Myths and Realities

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Someone has said that the purpose of research is to distinguish what we know that's true from what we know that's not true. The result seems to be emerging from research on the climate for learning in the classroom. While some of the widely held beliefs about the nature of the classroom in which pupils learn more are supported, others which are strongly held are not or even turn out to be counterproductive.

Emotional climate is an example of a domain in which beliefs are partly true, but only partly. First, it is important to recognize the separate dimensions involved. If positive and negative expressions of affect are measured separately, the relationship between them is low, so that it is necessary to study them separately. When each is related with measure of pupil outcome, negative affect is associated with decreased learning, as expected (although even this result needs qualification with middle and upper socioeconomic status pupils). But in a set of studies selected by stringent quality criteria,the relations of positive affect with learning are as often negative as positive. Perhaps this is because positive affect may occur often in classrooms where there is considerable activity, but with little focus on learning — at the extreme, positive affect may substitute for task activity. In contrast, however, positive affect appears to support such noncognitive outcomes as self-concept and attitude toward school. So the usual beliefs are partially but not completely true with respect to affect expression.

A second domain of interest is that of management. It seems functional to distinguish the amount of freedom for pupils vs. teacher control in three subareas — pupil behavior, learning activities and thinking. Pupil behavior refers to the nonsubstantive activity in the classroom — physical movement, socializing, the general noise and activity level. Here, the findings are simpler — the more such activity, the less pupils learn. The second subarea is concerned with the choice

and conduct of learning activity — does the teacher choose, direct, monitor and evaluate learning activity unilaterally, do pupils have some choice and freedom for self-direction, or at the other extreme are pupils free to choose and carry out learning activities within broadly defined limits. Considerable evidence suggests that an intermediate position on this dimension is associated with most learning — that is, there is an optimal balance between teacher control and pupil freedom at which pupils learn most.

A secondary, less clear-cut finding suggests that the nature of the learning objective makes a difference in the degree of teacher control which is functional. If the objective is a simple one requiring only memory, relatively close control by the teacher is functional, but if pupils are doing complex problem solving or creative activities,then greater freedom is functional. But these are variations on the major theme of an intermediate degree of teacher control as optimal, "In all things, moderation."

The contrast between behavior and learning activity seems important — close limits being functional for learning in the first case, but an intermediate degree of control in the latter case. The correlation for the two kinds of control across classrooms is high, suggesting that most teachers do not distinguish the two subareas. The important question seems to be, "What is being controlled — behavior, or learning activity?"

The third area of management, teacher control of thinking, presents relatively straightforward results. For disadvantaged, primary grade pupils learning basic skills (where most research has been done), greater amounts of teacher-pupil interaction at high cognitive levels are associated with decreases in pupil learning, even for outcome measures at a high cognitive level. The results are opposite to expectation, but consistent across a number of studies so as to be difficult to dismiss. Further, experiments which have studied materials as well as interaction for a variety of grade levels and outcomes offer no support for this belief that teachers should emphasize high cognitive level activity to a greater degree. These results raise a series of further questions about their meaning, but they do seem to raise warning flags.

All in all, these findings sometimes support, sometimes qualify and sometimes disagree with beliefs about the effective classroom for learning. They do seem readily applicable, however, and offer the possibility of improving classroom practice.

What Does Research Have To Say About Teacher Motivation?

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What helps teachers to do better? What can be done by school leaders to improve the performance of their teaching staff? The purpose of this paper is to highlight research findings related to teacher motivation in order to help us understand the intricate nature of human performance and what constructive means can be initiated in order to further job satisfaction.

Definition

What is motivation? Wlodkowski (1978) says it deals with why behavior occurs. It's a word to describe those processes that can (a) arouse and instigate behavior; (b) give direction and purpose to behavior; (c) continue to allow behavior to persist; and (d) lead to choosing or preferring a particular behavior.

Maslow

A review of general motivation theory and its related educational research is an interesting beginning in this investigation. Maslow (1954) delineated a hierarchy of needs in everyone, ranging from basic physiological needs of hunger and thirst, to safety and security, social needs, esteem and status ego needs, and finally, self-actualization or the need to fulfill one's potential. Once a lower level need is satiated, a person is free to satisfy the next one. When the lower need is threatened, it reverts to being the top priority, until again satisfied.

Studies of Maslow's "need deficiency" of teachers and administrators were conducted by Sergiovanni (1973). Some of the findings were: 1) individual teachers vary as to their unsatisfied needs, 2) there is less satisfaction of the needs of esteem and self actualization, 3) the most pressing need of teachers is in the esteem area.

Investigation by the author using a "motivation feedback questionnaire" (Handbook for Group Facilitators, 1973) with teachers reveals the same results. Many teachers will work harder for rewards at the esteem level than for other rewards.

Herzberg

Studies by Herzberg found that satisfiers and dissatisfiers in organizations are not opposite ends of a continuum, but rather, are two separate and distinct factors. Herzberg (1966) found five factors as strong determiners of job satisfaction–achievement, recognition, work itself, responsibility, and advancement. On the other hand, major dissatisfiers were company policy and administration, supervision, salary interpersonal relations, and working conditions. In other words, reducing or improving the dissatisfaction items does *not* necessarily help people "produce" more. An emphasis on the satisfiers, however, might certainly lead to increased production.

Sergiovanni (1969) replicated Herzberg's work and found three dominant factors contributing to work satisfaction of teachers: achievement, recognition, and responsibility. Dissatisfiers included interpersonal relations with subordinates, interpersonal relations with peers, supervision, school policy and administration, and personal life. Similar findings for secondary school administrators were reported by Schmidt (1976).

Interestingly, a recent survey of principals in California (Olivero and Armistead 1981) regarding their inservice needs indicates a desire for the following training: 1) development of a positive school climate, 2) effective teacher evaluation, 3) application of interpersonal relations skills, 4) communication skills, and 5) supervision for the improvement of instructional programs. What these principals are saying they need most is help in reducing dissatisfiers and not ways to necessarily increase job satisfaction.

McGregor

The work of McGregor (1960) and his Theory X and Y is generally known and understood. The one approach (X) uses extrinsic or

external rewards and punishments. That is, money, fringe benefits, social acceptance and rejection. This is the negative image of human nature which argues that organizations must exercise external controls to coerce their unwilling workers to produce.

The alternate view (Y) sees people as dynamic and self activated. Given the opportunity, people will pursue at work goals associated with higher level needs for autonomy, self-respect, responsibility, and achievement.

Theory Z

The recent work of Ouchi and an analysis of Theory Z (1981) focuses on an organizational concept rather than an individual leadership style. Productivity is related to a sense of collective responsibility among all employees for the final product. The "quality circle" is a procedure which seems to possess all the positive attributes of participatory decision-making. Trust, subtlety and intimacy (caring and support) are the necessary ingredients in a Theory Z organization.

Can Theory Z work in the United States and with educational organizations? Some would say that Individually Guided Education (IGE), an organizational model, (Klausmeier, 1971) is a good example of the theory in practice. It does appear that we can learn a great deal from these principles as it relates to increased educational achievement, job satisfaction, and, of course, teacher motivation.

Trust

"Trust" is a leadership skill which may lead to increased teacher motivation. That is, a climate of trust can help establish an atmosphere where esteem and achievement needs for teachers can be met. If this perception is accurate, one needs to better understand what trust is and what behaviors will assist in establishing trust relationships. The Handbook of Structured Experiences (Pfeiffer and Jones, 1981) includes an analysis sheet which highlights these behaviors-sharing; vulnerability; loyalty; accepting others; involving others; valuing; awareness; communicating; openness; and honesty.

Schmuck and his associates (1977) have identified a number of freeing responses that can increase trust:

- listening attentively rather than silently
- paraphrasing
- seeking information to understand the other better
- offering relevant information
- describing observable behaviors that influence you
- directly reporting your own feelings
- offering opinions, stating your value position

Binding responses that can reduce trust are:

- changing the subject without explanation
- focusing on and criticizing things that are unchangeable
- trying to advise and persuade
- vigorously agreeing or strongly objecting
- approving someone for conforming to your own standards
- commanding or demanding to be commanded

The Annual Handbook for Group Facilitators (Pfeiffer and Jones, 1977) includes an inventory which elicits feelings of trust or distrust within an ongoing group. It can provide the basis for an assessment of trust.

Blumberg and others (1978) looked at a group of teachers and

principals and this dimension of trust in order to better understand the meaning of the word and what teachers mean when they think about trusting their principal. Four factors seemed to emerge from this analysis:

1. Personality (warmth)

2. Interpersonal style (open)

3. Professional role expectations (fairness, confidentiality, supportive, credible)

4. Administrative role expectations (technically competent, participative decision-making, follow through on decisions)

The above factors relate to the conditions and environment of work rather than the work itself. The focus, interestingly, was upon satisfiers (hygienic factors) rather than upon motivators.

Rewards

Returning to the major issue of what motivates teachers, rewards that result from job content are known as "intrinsic rewards" while those which arise from outside job content are known as "extrinsic rewards." Deci (1976) and Meyer (1975) have argued that the danger of an extrinsic system is that the employee becomes dependent on the reward and loses intrinsic motivation.

There are few extrinsic rewards available to teachers- salaries are not based upon performance and there are very few promotions within the teacher ranks. "Just a teacher" is a phrase with which we are all familiar. Intrinsically, then, Thompson (1979) says interaction with students is the thing that counts. Getting through to the students and the process of effective teaching can result in feelings of personal achievement and pride of workmanship–and be a prime motivator.

In a study by Spuck (1974), teachers were found to be initially attracted to extrinsic rewards (raises and fringe benefits), whereas intrinsic rewards were the ones which improved job performance and

reduced absenteeism. Herrick (1973) determined that a decentralized authority structure was significant in motivating teachers. In a highly stratified system, rewards are distributed to only a small number of teachers.

Lortie (1975) also found intrinsic rewards to be the major source of work satisfaction. Three quarters of the 6,000 teachers surveyed said that psychic rewards–having reached students and knowing they have learned–is the factor of importance.

Kimball (1977) examined the relationship of teacher reward systems to pupil achievement. He found that teachers in high achieving schools more frequently reported the use of intrinsic rewards. Personal achievement and self-confidence appear to be the best incentives to improve teaching.

An understanding of intrinsic and extrinsic rewards is also helpful in understanding effective staff development. Yarger and Mertens (1980) describe the different concerns for teachers at different levels of experience. Beginning teachers are interested in discipline techniques, pedagogical skills and specific, immediate feedback.

Practicing teachers (3 to 8 years of experience) are more stable and are interested in content expertise and preparing for new professional roles. The experienced teacher is "motivated" by opportunities to share his/her expertise.

Extra Pay

What about a merit pay system? Is this an extrinsic reward? Didn't we try this once through differentiated staffing and decide it wouldn't work? Casey (1979) suggests a system of merit pay for outstanding effort and insists that it should be large enough to make a difference.

Farrar (1981) found that 89% of the administrators and half the teachers in a study responded that it is fair to award teachers' salary on a performance contingency basis. Pay related items and recognition may, indeed, hold some promise in the future.

A number of states (Florida, Georgia, South Carolina, Oklahoma) have recently begun competency certification for new teachers which involves assistance from peer or master teachers. Some would argue that a salary increment for these individuals would provide a status reward which could be intrinsic.

Influence of Principals

A study by Erlandson and Pastor (1981) suggests that most of the changes necessary to stimulate teachers to excellence can be wrought by building principals. The researchers found that about two-thirds of the 150 teachers studied possessed a predominance of higher order need strengths and that these individuals were the least satisfied, presumably because their needs were not being met in schools. The authors conclude that the principal has the power to help those who wish to be involved in decision-making, have freedom needs and the need for independence in their work.

A paper by Quinn (1978) also highlights the responsibilities of the principal for teacher motivation. Case studies are presented which document specific techniques and procedures in this difficult task.

Miller and Swick (1976) identify ways administrators can motivate teachers by recognizing a job well done. Notices in bulletins, classroom visitations, teacher-directed presentations, "teacher of the week" (month, year) awards, and other reward strategies are identified.

Performance contracting with teachers is a technique administrators can use to increase staff motivation, says Safferstone (1977). Such a contract, which is an agreement in which rewards are promised in return for certain behaviors, is a type of goal-setting which can motivate people with higher levels of "pay"—belongingness, respect, appreciation, and opportunities for self-actualization.

Summary

The preceding pages attempt to highlight the latest research findings related to teacher motivation. Certainly all the available information has not been reviewed but a representative analysis has been presented.

We have looked at the theory described by Herzberg, McGregor and Maslow and analyzed its relationship to educational organizations. These three individuals are still the basis for much of our motivation discussion.

Theory Z is of major interest today in the business world with American productivity slipping. Have we in the United States been too preoccupied with "bottom line" profit–or academic achievement in the schools? Shouldn't we be equally concerned with job satisfaction as well as productivity in order to meet our potential? Much of the literature reviewed would suggest that this is the case.

Trust and the establishment of trust is a concept to which we provide a great deal of lip service but little in the way of what it really is, how it can be established and its relationship to motivation. The literature does not help us very much with this issue.

Intrinsic rewards are also discussed and their relationship to teacher motivation. Those of us in education have always recognized that financial remuneration was not the thing that brought us to teaching, but it was "Love." We loved working with kids and helping them learn and grow. Unfortunately, we do not appear to have the love of our students or his/her parents today as once was the case. If we don't have love or money, what do we have?

Frustration, burnout, and stress are quite apparent in schools today. It would seem to be to our advantage, for educational leaders to promote the motivators—the ways in which the higher level needs can be met; to challenge achievement needs with goal-setting opportunities; to sincerely recognize teachers for the good work they are doing; to provide the opportunity for shared decision-making; to give teachers more real responsibility and less paperwork; to figure out bigger and bigger ways of rewarding; and to help all of us to grow professionally. These are difficult challenges but it's an investment that seems worthy of our time and effort.

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Staff Development and Evaluation Plan for the Direct Instruction Model

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Evidence exists that the instructional needs of specific student populations have not been met in the mainstream of public education. These educationally disadvantaged students lack the basic skills necessary for school success. This produces a cumulative academic deficit which severely limits their life-long opportunities. However, it is believed that 1) teachers can be trained to apply principles of direct instruction, classroom behavior management, and precision teaching to the needs of this specific student population; 2) teachers can learn to adapt traditional materials to this instructional model; 3) when this instruction is provided,all students can learn.

During the 1981-1982 school year, Orange County public schools received a Federal Grant to implement the DIBS (Direct Instruction In Basic Skills) Project. This grant enabled the DIBS Project Staff to design, develop, implement, and evaluate a comprehensive model for delivering effective basic skills instruction in the areas of reading, mathematics, and oral and written language. Because the model is based on instructional methods they are unfamiliar to many teachers, a staff development component was a critical aspect of the project. This report focuses on the staff development plan and an overview of the evaluation strategies for the project.

A Staff Development Plan

The staff development plan of the DIBS (Direct Instruction In Basic Skills) Project contains two major components. The first consists of training in the commercial direct instruction materials, Distar and the Corrective Reading Program (CRP), as well as the application of a direct instruction teaching style to the basic skills. The second component is designed to provide follow-up training and assistance for those teachers and aids utilizing the commercial materials in their classrooms.

A review of the research investigating utilization of direct instruction was conducted to assist in formulating the activities in this staff development program. The three aspects of research which were found to be most relevant were: (1) identification of the critical teaching behaviors for successful implementation of direct instruction; (2) evidence that training can increase the levels of these critical behaviors; (3) indications about the type of training which is most effective.

Considering the first aspect, a variety of studies dealing with successful implementation of commercial direct instruction materials showed the following teaching behaviors to be consistently correlated with positive results in terms of student behavior and/or achievement:

1. Following the format - The teacher says the words in the script and gives individual turns when specified. Words are added only to praise, correct or secure 100% response.

2. Signals - The teacher uses the appropriate visual or audible signal to tell the group when to respond.

3. Corrections - The teacher corrects every mistake as soon as it occurs, uses the appropriate correction procedure and returns to the beginning of the task.

4. Criterion teaching - The teacher monitors student responses, requires all students to respond in unison or group turns and repeats tasks until all students respond correctly.

5. Pacing - The teacher presents material very quickly within tasks except to pause to allow students thinking time immediately before responding and moves from task to task with no delay.

6. Praise - The teacher uses behavior specific praise to reinforce attention and correct responses.

The studies which were located relevant to the second area of program development, whether training can effectively increase levels of direct instruction teaching behaviors, focuses on a fairly diverse set

of behaviors associated with a more general direct teaching style as well as the previously listed critical behaviors within the context of Distar or Corrective Reading instruction. In all cases, training or staff development was successful in improving implementation of general direct instruction principles as well as specific teaching behaviors.

Additional research findings were important for program development in respect to the duration of training and the particular type of training activities. The desirability of scheduling training so that it continues over a period of time was suggested by studies which showed differential mastery rates for the teaching behaviors which were vital to the effectiveness of the commercial direct instruction programs.

Although one study, which investigated the use of a general direct teaching style, favored minimal intervention in training, the findings of researchers involved in training the use of the commercial materials showed a directive, structured approach to be more effective.

This was confirmed by related research which attempted to train teachers to implement behavior management principles. The preferable training techniques for high level implementation which leads to mastery through modeling the correct response and guided practice; observation and concrete behavioral feedback; praise or reinforcement of the correct response. Utilization of these methods in frequent, group and individual sessions was most desirable.

Incorporating the information generated by the research review, the DIBS staff development plan was designed with two major components. The first component involved large group inservice programs conducted for the entire faculty and staff. These programs focused on training the use of the commercial programs, the use of direct instruction as a teaching model and the application of this model to teaching basic skills. Participants were also taught selected principles of classroom behavior management and precision teaching which are helpful in implementing direct instruction.

The second component consisted of a follow-up training and assistance plan for those teachers using Distar or CRP in their

classrooms. This plan included classroom visitation and conferences, use of self-evaluation forms and small group training sessions.

Classroom visitation was scheduled every one or two weeks initially. The trainer observed and worked with the teacher and the Distar or CRP group during the reading lesson. She or he used the techniques of demonstration teaching and prompting during these sessions.

Demonstration teaching allowed the trainer to teach the group, thus providing a correct model for teacher behavior. The teacher then taught a similar task or used the same principles in a similar context immediately following the demonstration. Frequent, short demonstrations were desirable; only a few concepts were demonstrated per session. It was extremely important for the trainer to identify the important elements the classroom teacher would be seeing before the demonstration. Occasionally an entire lesson was demonstrated for a specific purpose, such as showing how to pace a lesson to get through the entire lesson or how to sustain student attention and responding.

The second technique used during the classroom visitations was prompting. The trainer sat with the teacher and children in the group to provide assistance in two ways. First, she or he modeled correct student behavior to assist the teacher in obtaining appropriate behavior or correct responses from the students. Secondly, she or he unobtrusively reminded the teacher of how to conduct a task or directed the teacher's attention to student behavior. It was vital that the trainer fade the use of these prompts as quickly as possible, at which time she or he sat with the group, observing but not interacting. Prompting occurred only with the classroom teacher's permission and adequate prior explanation of the process.

Classroom visitations made by the trainer always were followed by individual conferences with that teacher. The items on the "Teacher Self-Evaluation: Distar or Corrective Reading" forms were used to structure the conference. In some instances, self-evaluation forms were reviewed orally; other teachers preferred to keep a written copy. The use of this form for conferences also clarified for the teacher those behaviors which the trainer would be looking for during each visitation. The trainer targeted just one or two teacher or student

behaviors for attention, to avoid overwhelming the teacher. Targeted behaviors were those which would produce the greatest change in the group's performance.

Throughout the visitation and conference process, the trainer focused attention on the students' behavior. This enabled the teacher to learn to evaluate student behavior, answer the question "What could I do to change this behavior?" and then take appropriate action. The trainer also was careful to provide sufficient positive reinforcement to the teacher to motivate efforts toward improvement.

Periodically, teachers were asked to return completed teacher self-evaluation forms to the trainer. The teacher could remain anonymous since the forms were used to aid the trainer in identifying areas needing attention in the small group training sessions. These sessions were held at least once every two months although shorter, more frequent sessions were desirable.

In the small group training sessions, the trainer either provided a correct model by teaching the teachers who assumed the role of students or by using videotapes. In both cases the model-lead test principle was followed to bring teachers to criteria. Again, critical behaviors were dealt with a few at a time and those behaviors having the greatest impact on group performance were dealt with first.

The small group sessions were also utilized to inform teachers of changes in formats or procedures before they occurred and provide additional implementation suggestions in areas such as reinforcement, scheduling or independent practice work. Idea-sharing sessions were more beneficial if a few teachers experienced with direct instruction were invited to join an inexperienced group or if teachers with varied experiences were included in the same group.

The trainer also arranged for outside consultants (possibly from SRA) to conduct one follow-up training session during the year. The fresh perspective this individual brought to the situation was helpful, and a "new face" often increased teacher motivation.

The success of the DIBS staff development plan was attributed to: (1)

The use of the "Follow-up Training and Assistance Plan" which augmented the skills the teacher acquired during the initial training sessions and enhanced the implementation of the Distar and CRP Programs; (2) the continuous attempts by the trainer to reinforce teacher effort and improvement and foster positive teacher and student attitudes about the DIBS Program.

An Evaluation Plan For the Direct Instruction Model

Innovative instructional models are continuously being developed, implemented and evaluated, but few have produced payoffs in terms of desired outcomes. The lack of significant impact may not always be due to a deficiency in the program or innovation. When innovations are implemented, educators often lose perspective that the teacher creates change in the classroom. Instructional models that require teachers to make significant changes in their instructional style are frequently only partially implemented in the classroom. Because teachers participate in a detailed and continuous inservice program, does not guarantee that they become immediate, sophisticated, and confident users of the innovation.

Evaluation models intended to assess the impact of complex innovations must consider at least two major sets of data; indications of improvement in student learning and indications of the extent of utilization of the instructional innovation. The evaluation design for the DIBS Project considered both components.

A pretest-posttest, non-equivalent control group design was used to examine student achievement data. The data analysis included the development of pretest-posttest, growth curves at each of six grade levels (grade one through grade six), for students in each of three pilot schools (schools in which the program was implemented) and a comparison school. Growth curves were produced for the reading, language and math scores on the California Achievement Test. All of the comparisons were made by using the standard scale on the California Achievement Test rather than grade equipment or percentile scores. A detailed summary of the student achievement data is available for review at the Project Office within the Orange County public schools. In brief, when using a stringent criterion of at least

twenty standard scale score points, the data show that students in the pilot schools outgained students in the control schools in approximately 25% of the classrooms, whereas the students in the control schools outgained those in the pilot schools in only 6% of the classrooms. The majority of the remaining 70% of the comparisons favored the pilot schools but the differential in growth was less than 20 standard scale score points.

An intensive effort was made to determine the extent to which trained teachers untilized the direct instruction model and to verify that teachers in the control schools did not use elements of the model. Although the staff development team collected information related to teacher use of the model, the project staff made the decision to collect independent data in order to validate the existing teacher use information. Levels of use interviews with a sample of teachers and a series of independent classroom observations by the project evaluator were used to validate the teacher use information collected by the staff development team.

The work of Gene Hall, Susan Loucks, et al. (see references), was used to guide the development of Levels of Use interviews. After receiving training in the Hall, et al., Levels of Use interview guides (LoU), the project evaluator and project administrator produced a modification of the LoU interview for use in the DIBS Project. The modifications were developed in order to obtain use information on each of four subcomponents of the project. The modifications were determined to be necessary because Gersten and Carnine (1980) reported that teachers who had completed one year of training in a similar project were nearly all given equal LoU scores by trained interviewers. These researchers reported that the LoU interview was insensitive to variations in teacher use of the Direct Instructional Model.

Teachers interviewed by the revised interview guide were given Levels of Use scores in each of four components. Their total score was determined by summing the scores of each of four components. The Pearson correlation between the total scores on the revised interview and the total use scores obtained from recorded observations of the team was equal to .68, a moderately high external criterion validity coefficient.

For purpose of triangulation, thirty minute classroom observations were conducted by the project evaluator. These observations were recorded on an instrument similar to that used by the staff development team during their classroom visits. The evaluator observed eight teachers in the pilot schools, and two teachers in the control schools. Each of the teachers was observed on three to five consecutive days. For these eight pilot school teachers, the Pearson correlation between the observation scores of the evaluator and the observation scores obtained by the trainers was .90, a surprisingly high external validity coefficient. The Pearson correlation between the evaluator's observation score and the Levels of Use interview score obtained from the revised form was .83, a high validity coefficient.

The observation and interview data demonstrated that there was a wide range of utilization of the complete model for direct instruction by classroom teachers. Approximately half of the trained teachers demonstrated a relatively high degree of utilization. The remaining half of the teachers varied from moderate to relatively low use of the innovation.

The Levels of Use interviews with teachers in the control school and the observation of two of the twelve teachers indicated that there was little use of the components of the Direct Instruction Model in control classrooms. Based on this information, it could be safely concluded that students in the control school were not exposed to elements of the Direct Instruction Model.

An attempt was made to investigate the relationship between teachers' Levels of Use and student growth as measured by the standard scale score of the California Achievement Test. Because the unit of analysis for this type of investigation is the individual classroom and because of the relatively small number of teachers at each grade level, this exploratory analysis was considered to be tenuous. Teachers in the pilot schools were categorized into high, moderate, and lower users of the Direct Instruction Model. There was an inconsistent pattern of achievement gain in the classrooms taught by trained teachers who demonstrated varying degrees of use of the model.

The results of the evaluation of the 1981-82 implementation of the Direct Instruction Model as represented by the DIBS Project in Orange County Florida schools indicated that in approximately 30% of the comparisons, students in the pilot schools demonstrated superior achievement gains when compared to the control schools. This result is particularly encouraging, especially because the standardized achievement test scores are often not sensitive to learning gains demonstrated by students in need of remedial instruction. The project also indicated that teachers can be expected to demonstrate a wide range of implementation of a complex instructional model after receiving one year of intensive inservice training. Although most teachers were able to demonstrate satisfactory mastery of the use of published instructional packages, there were considerable variations in the use of the classroom management aspects of the model. Approximately half of the trained teachers mastered the use of signals to direct student activity and effective use of positive reinforcement in classroom management. There was a wide variation in teacher mastery of the complex and difficult task of proper pacing of a lesson.

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The Florida Beginning Teacher Program

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The Florida Beginning Teacher Program has as its central purpose the improvement of the performance of all beginning teachers through a comprehensive program of support, training, and documentation of the generic teaching competencies during the first year of teaching. It has as its rationale several ideas and beliefs that are widely held by the practitioners, those who prepare them, and the public they serve. These are:

1. Demands placed on teachers are greater than ever before, due to the increasing complexity of our society and the expectations placed upon the school. The profession itself is more complex than it was 30 years ago; to teach well requires a highly skilled and competent professional

2. There is an expanded knowledge base for teacher education, attributable to the large amount of research on teaching that has taken place over the last ten years. Teachers are expected to use this professional knowledge and to employ professional skills in their practice.

3. Current programs for the preparation of teachers are inadequate to meet the demands of professional practice. Evidence reveals that almost no major changes have occurred in the time allocated or content provided for preservice teacher education in the last 30 years, despite significant advances in knowledge and fundmental changes in educational structures and practices in school and other social agencies.

4. The public recognizes that teachers play a central role in providing educational opportunity. The public holds high expectations for teachers, as indicated by legislative action on

mainstreaming, bilingual education, accountability, competency testing, and designation of funds for inservice education. The quality of teachers and teacher education is a national issue.

5. It is recognized that a fully developed professional program that would prepare highly skilled teachers requires more than the traditional four years now allocated for teacher preparation. At the same time, extending the time required for preservice teacher preparation beyond four years is believed by most college personnel to be not politically and economically feasible at this time.

6. Induction into the teaching profession, like any other profession, is a unique period. It is a period that is very likely the most difficult phase of a teaching career. All beginning teachers have some problems; preservice programs have been unable to prepare most prospective teachers so that no problems will be encountered as they begin to teach.

7. A major reason for attrition from the profession is the lack of a formalized system for support during the induction period. Induction becomes a matter of survival.

8. The responsibility for quality control—for deciding who is safe with our students—rests with the profession; it is not the sole responsibility of the preservice program. Some of the most important things that must be learned about teaching can only be learned in the school setting.

A Brief Legislative History

The 1978 and 1979 sessions of the Florida Legislature addressed early participation in the classroom for students in teacher education programs and a year-long internship prior to the issuance of the regular teaching certificate. The 1981 session further addressed this concept by requiring participation in a year-long beginning teacher program rather than the internship, and making this program effective July 1, 1982.

In 1978, legislative action taken through Committee Substitute for Senate Bill 549 provided in part that the Legislature finds that policies proposed by Florida teacher training institutions to place student teachers in the classroom as early in their undergraduate program as practicable...are desirable. This act further stated that the applicant for an initial regular teaching certificate must have completed one year of satisfactory teaching or a year-long internship approved by the State Board.

Committee Substitute for House Bill 1689, passed by the 1979 Legislature, provides that "beginning July 1, 1981, no individual shall be issued a regular certificate until he has completed 3+ school years of satisfactory teaching pursuant to law and such other criteria as the state board shall require by rule, or a year-long internship approved by the state board. The department, in conjunction with teacher education centers and colleges of education, shall provide for model satisfactory teaching and internship programs to be implemented in selected districts. The models shall be evaluated by the department, and the specifications for such programs shall be selected for implementation in all districts by July 1, 1981."

During the 1981 legislative session, Committee Substitute for Senate Bill 338 was enacted. This Act provided that one requirement for the initial regular teaching certificate was successful completion of a year-long beginning teacher program. Three years of satisfactory out-of-state teaching experience may be substituted for participation in the beginning teacher program.

Models for Year-Long Internship/Beginning Teacher Program

The Office of Teacher Education, Certification and Staff Development was responsible for developing recommendations on the aforementioned legislation. In September, 1979, institutions of higher education and teacher education centers were requested to submit proposals which addressed the development of program models. These proposals were to address the following items:

1. Year-long internship procedures for specifying interns to be involved in the project shall include interns at the elementary (K-6)

and secondary (7-12) levels and Beginning Teacher Program procedures for specifying beginning teachers at the elementary (K-6) and secondary (7-12) levels and non-academic vocational levels.

2. Procedures for providing supervision for beginning teacher/interns in the project.

3. Procedures for assigning a variety of experiences for beginning teachers/interns in a project.

4. Procedures for cooperative planning among teachers, interns, supervisors, and university personnel in the project.

5. Procedures for providing inservice education for beginning teachers in the project.

6. Procedures for enabling beginning teachers/interns in the project to demonstrate essential competencies in school settings.

7. Procedures for documenting performance of beginning teachers/interns in the project.

8. Procedures for assessing the performance of beginning teachers/interns in the project.

9. Procedures for providing feedback to beginning teachers/interns.

10. Number of beginning teachers/interns to be included in the project.

11. A budget which indicates the items for which project funds and in-kind funds will be expended.

12. Commitment to produce a report, including recommendations, which will be meaningful to other teacher education centers, colleges, or universities. The report should include evaluation procedures throughout the project.

Sixteen proposals for the Year-long Internship/Beginning Teacher Program were received and reviewed by the Office. Six proposals were recommended for funding during 1979-80. The projects for model development which received financial support were Hillsborough, Leon, Panhandle Area Educational Cooperative (PAEC), and Wakulla teacher education centers, Stetson and Florida Atlantic Universities. Categorically, these sites represent one large district, one medium district, one small district, one multi-district teacher education center, one private university, and one state university.

Models that addressed the specified central elements of the program were developed and completed by each of the six projects during 1979-80. Florida Atlantic University and PAEC Teacher Education Center decided to withdraw from the year of field testing for the models. Field testing of the other four models was completed by July, 1981, and the results and corresponding materials were submitted to the Office of Teacher Education, Certification and Staff Development.

State Board Rule 6A-5.75

Results of the field testing of the four pilot projects, together with input from the Education Standards Commission and professional education groups were utilized by the Department of Education to formulate a rule to implement the provisions of Committee Substitute for Senate Bill 338. The State Board of Education adopted Rule 6A-5.75 at its November, 1981, meeting.

The purpose of the Florida Beginning Teacher Project, as stated in this Rule, is to provide a set of supervised support services for teachers in their first year of teaching in Florida, assist them in their continued professional development, and to verify satisfactory performance of the generic teaching competencies. The Rule addresses the requirements for the Beginning Teacher Program to be implemented by school districts and private schools. Included in the Rule are definitions of terms related to the program, procedures, criteria for program approval, criteria for successful completion, and appeal procedures.

The Rule requires that the initial plan be submitted by May 1, 1982. It further requires that the plan become a section of the Master Plan for Inservice Education, and therefore, be subject to provisions for amending and updating that plan.

Beginning Teacher Handbook

A Handbook to assist school districts and private school personnel with the development of plans for the Beginning Teacher Program has been developed by the Office of Teacher Education, Certification and Staff Development. Criteria specified in the Statute and Rule and data from the four pilot projects were the basis for the Handbook. The purpose of the Handbook is to share strategies, documents, and procedures from the pilot projects to assist with the development of Beginning Teacher Program Plans by each district and private school.

The Handbook, which was distributed to Beginning Teacher Contracts in each district in November, 1981, categorizes the requirements for the Beginning Teacher Program into twelve items. These items are then discussed in some detail. Examples from the pilot projects are included for each item on color-coded pages. Suggestions from the pilot projects which relate to each item are also included. Appendices to the Handbook include the legislation, State Board Rule, evaluation strategies for the essential competencies, and personnel who serve as the district contact for the Beginning Teacher Program.

Regional Meetings

To provide further assistance to school districts and private schools in the initial phases of planning, program contact persons for all districts, teacher education centers, and colleges and universities were invited to attend one of the eight regional meetings conducted by the Office of Teacher Education, Certification and Staff Development in November and December, 1981.

At each of the regional meetings, the Handbook was presented and discussed in detail, provisions of the Rule were explained, and time-

lines for plan development were defined. Concerns of participants were gathered for consideration by the Department in an attempt to provide as much assistance to school districts as possible as they developed their plans.

Following the regional meetings, personnel from the Office of Teacher Education, Certification and Staff Development made approximately thirty visits to school districts to meet with planning committees as they began to write a plan.

Review of District Plans

Beginning Teacher Program Plans were submitted to the Office of Teacher Education, Certification and Staff Development on or before May 1, 1982, for review. An evaluation instrument that specifies criteria for each of the twelve items required in the plan was developed for the review. Twelve three-member teams of trained reviewers critiqued the plans on May 24-25. Each team was chaired by a staff member of the Office of Teacher Education, Certification and Staff Development, with one person from a district or university serving on each team. The third team member was a Department of Education staff member. Results of the review will be communicated to plan developers prior to June 30, 1982.

Funding and Legislative Support

During the 1982 legislative session, funding for the Beginning Teacher Program was provided from several sources. Specifically,

1. Funding of staff development was increased from $5 to $6 per FTE, with $1.70 per FTE designated for implementation of the Beginning Teacher Program. This extra dollar will provide an additional $1,608,017 statewide for providing training and support for the beginning teacher.

2. Teacher education centers were re-funded at the current level of $3 per unweighted full-time equivalent student.

3. University funding of teacher education center non-credit activity was continued at $1.55 per FTE, for a total of $2,525,451.

4. Allocation of $230,000 under the Management Training Act which will provide funding for training of administrators for Beginning Teacher Program activities and other performance areas.

The 1982 Legislature placed major emphasis on the Beginning Teacher Program and the improvement of the performance of educational leaders. Especially addressed were improved competence in evaluating teachers and effective instructional leadership, with the intent that improving administrators' skills in these areas would directly support improved performance by all teachers and, ultimately, greater achievement by all students.

Beginning Teacher Performance Measurement System

State Board Rule 6A-5.75 requires the verification of demonstration of the generic teaching competencies through a formative and summative evaluation process. This requirement precipitated a concern for the development of standardized procedures for conducting systematic observation and performance evaluation to ensure consistency from teacher to teacher, school to school, and district to district within the state. In November, 1981, a number of interested professionals from Florida school districts, teacher education centers, and colleges and universities met in Tampa to plan for the development of a system to measure beginning teacher performance. Following this meeting, all school districts, teacher education centers, and colleges and universities were invited to participate and contribute to a coalition effort that seemed promising, even though no State appropriation was available for this purpose.

The Coalition has focused its efforts on the development of a system for beginning teacher performance measurement. Development of this system requires that knowledge about teacher effectiveness that has accumulated from research on teaching be so assembled and organized that it can be used in the development of a performance observation system and a corresponding set of training materials for local Beginning Teacher Support Systems. Furthermore, the knowledge base of teacher effectiveness must be integrated with the Florida generic teacher competencies so that the wisdom of the

teaching profession will also be reflected in both the observation system and the training materials. To these ends, four teams have been at work as follows:

Team 1—This is the Research Team whose purpose has been to comb the research literature to establish a knowledge base of teacher effectiveness that is as comprehensive as current work in this area will permit. This team is now completing the assembly of research findings into categories of *domains* that treat particular areas of teacher behavior. These domains are:

1.0 *Planning*—This refers to teacher performance in daily, weekly, and long range program planning in the preactive phase of teaching.

2.0 *Management of Student Conduct*—This includes teacher activities that minimize the frequency of disruptive student conduct.

3.0 *Instructional Organization and Development*—This refers to teacher performance that provides for conservation of class time, organization and delivery of instruction, and teacher-student interaction.

4.0 *Presentation of Subject Matter*—This refers to manipulation of the content of instruction to induce learning.

5.0 *Communication: Verbal and Nonverbal*—Teacher behavior that evokes or expresses affective personal states or communicates cognitive information.

6.0 *Evaluation*—This refers to the ways teachers handle such matters as examinations, tests, and written work.

In addition to these domains of teacher behavior, there is a significant body of research knowledge related to the conditions under which teaching takes place that can be organized as follows:

Frame Factors—These are the conditions that affect classroom performance and over which the teacher has little or no control.

Instruction Format—This refers to the organization of the class group, plus the roles of students and teachers in communication and task activities.

This information is useful for understanding the teaching situation that is being observed, and is essential to the norming or the performance measurement instruments that are being developed.

Team 2—This is the Integration-Research Team. It has the responsibility of coordinating the research on effective teaching with the Florida competencies. A major task of this team will be to ascertain whether or not there are competencies in the Florida list that are not observable in the classroom and can only be evaluated by some other form of examination such as interview, special assignment, written documents, or other items included in the beginning teacher's portfolio.

This team will prepare a manual of suggested procedures for documentation of those competencies not directly observable in the classroom and, therefore, not included in the observation instruments.

Team 3—This is the Instrument Development Team. The job of this team is to develop the performance observation system. The system will consist of two types of instruments. The first is a set of formative instruments, one for each domain, and the second type is a summative instrument.

The summative instrument will be used to identify beginning teachers who need immediate help in handling classroom responsibilities and to supply data for use by the evaluation personnel in the school in assessing the beginning teacher's demonstration of the generic competencies.

The formative instruments will correspond roughly to the domains of teacher behavior outlined above. There is one on management of

student conduct, one on presentation of subject matter, and so on. These instruments will be used to spot particular teacher difficulties from the first (screening) use of the summative instrument. Information on specific difficulties provides the basis for deciding the kind of help the teacher needs and, consequently, the relevant training materials.

Developmental plans call for providing the Coalition with a summative instrument by August 1, 1982. The plans also call for two or more formative instruments to be provided by August and the remainder during the academic year. It should be borne in mind that further revision and refinement of these instruments will continue over the summer and throughout the 1982-83 academic year.

Team 4—This is the Performance Measurement Training Team. The primary responsibility of this team is the design of a workshop for training school administrators to use the performance measurement system.

In order to meet the need for training, it is necessary to prepare teams of trainers capable of delivering several types of workshops with a high degree of reliability. The Coalition will be directly involved in the training of university and district personnel who will serve as *Training Leaders* and *Training Team Members*, who will work with the leaders, in the delivery of training to school-level administrators.

The Coalition will be responsible for training activities as follows:

1. Training of approximately 40 Training Leaders from universities and districts who will be able to conduct a variety of workshops and information sessions.

2. Training approximately 80 Training Team Members who will work with Training Leaders to deliver the workshops and information sessions described above.

3. Designing and coordinating the delivery of 90-100 workshops for school administrator training in the use of the performance measurement system.

4. Developing a set of manuals to be used by Training Leaders and Training Team Members, including:

a. *Beginning Teacher Performance Measurement System* Handbook—An extensive discussion of each domain, the subskills within the domain, and the integration of the subskills within the domain with the Florida generic teaching competencies.

b. *Beginning Teacher Performance Measurement System Trainer's Manual*—A narrative description of each training activity, its objectives, procedures, setting, needed equipment and materials, and typescripts of mediated events.

c. *Beginning Teacher Performance Measurement System Participant's Manual*--The materials to be used by participants during the initial training workshop.

Expected Outcomes

Potential outcomes of the Florida Beginning Teacher Program and the work of the Coalition are comprehensive and significant, in terms of teacher training, evaluation of teacher performance, and collaboration among teachers, administrators, districts, teacher education centers, and universities. Specifically, these can include:

1. Improved beginning teacher performance.

2. Increased involvement of preservice teacher educators in the continuing professional development of teachers.

3. Increased knowledge and skill in observing and evaluating teacher performance for administrators, teacher educators, and other professionals.

4. Utilization of feedback about the performance of beginning teachers for program revision and evaluation at the preservice level of training to provide a common knowledge base for professional development.

5. Development of a model for performance measurement of all teachers that is based on those behaviors that have been shown through research to have a direct relationship to improved student achievement.

Summary

The Florida Beginning Teacher Program has provided the impetus for the development of a unique program for teacher education. While the emphasis of the program is on the professional development of the beginning teacher, the collaborative development and implementation of the model by district, state, and university level educational agencies has resulted in a framework for a continuum of professional development that can unify preservice and inservice teacher education.

A major part of the work on this program has been sponsored by a coalition of school districts, teacher education centers, and colleges and universities, with coordination from the Florida Department of Education. The Coalition has focused its efforts on the development of a system to measure beginning teacher performance. Components of the system include:

1. A knowledge base derived from research on effective teaching, organized into domains of teacher behavior and used in the development of a performance observation system and a corresponding set of training materials for local Beginning Teacher Support Systems.

2. A performance observation system that consists of two types of instruments: a set of formative instruments that correspond to the domains that will be used for diagnosing particular teacher difficulties; and a summative instrument that can be used both as a general screening instrument and a summative evaluation instrument.

3. A manual of alternative strategies for measurement and documentation of nonobservable teacher competencies.

4. A comprehensive, tri-level training program for training

university, district, and school level personnel in the use of the performance measurement system, including a content handbook and a trainer's manual.

5. A set of manuals and accompanying materials for the beginning teacher, administrators, support team members, preservice teacher educators, and others involved in the training of teachers.

Development plans call for completion of the summative instrument, at least two of the domain-specific formative instruments, the performance measurement training components, and the manual for measurement and documentation of nonobservable competencies by September 1, 1982. System refinement activities will continue through 1982-83, including instrument and training validation, instrument norming, and development of additional manuals and materials for the beginning teacher and support team members as outlined above.

Two-Factor Leadership Theory: A Myth

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Introduction and Statement of the Problem

The purpose of this paper is to report the results of two research projects which concern educators' leadership style. The first project tested two-factor leadership theory using the Leadership Behavior Description Questionnaire XII, while the second made use of a subscale of Values Education (Val Ed), Teacher–Child Control.

Review of the Literature

Leadership

Early leadership research was concerned with traits of leaders. It was assumed that leaders were born and could not be trained. Traits became predictor variables used to identify future leaders. Traits that appeared to be important were height, weight, physique, energy level, health, appearance, intelligence, self confidence, sociability, initiative, originality and geniality (Schutz, 1977). Few consistent findings endured. Not one set of personality traits could be identified as those which discriminate leaders from nonleaders (Hersey and Blanchard, 1972).

A second approach to the study of leadership partitioned leadership behavior into styles such as democratic, autocratic and *laissez faire*. Research was designed to determine which style was the most effective and which group was most productive.

The most recent strategy used to examine leadership behavior in groups has generated a generally accepted two-factor theory (Reddin, 1977). An early classic which may have given rise to later views was that of Barnard's efficiency of goal achievement and effectiveness of satisfying the social and emotional needs of the group (1938). Later

research produced pairs of factors such as employee and production orientation (Hersey and Blanchard, 1972), initiating structure and consideration (Halpin, 1966), and concern for production and concern for people (Blake and Mouton, 1964).

Certainly leadership behavior is complex. Likert stated that effective leaders "make clear to their subordinates what the objectives are and what needs to be accomplished and then give them the freedom to do the job" (Likert, 1967).

Teacher Power and Student Control

The literature of classroom management of learning makes a strong case for a teacher's need for control of the environment. Control is influence in the classroom organization. Power is the ability to influence behavior. In order to "make clear to their subordinates what the objectives are and what needs to be accomplished and then give them the freedom to do the job," a teacher must possess power and control while teaching (Likert, 1967).

Method

The data for this research were drawn from two groups. The first was comprised of item responses to a convenience sample of 877 adult educators drawn from the Central Florida area. Each person was asked to respond to eighteen statements selected from the Leadership Behavior Description Questionnaire XII (Sergeovanni et al., 1969). The data was used to generate a correlation matrix and then subjected to the Harris rescaled image procedure. Components were retained according to the eigenvalues of the correlation matrix equal to or greater than one. The raw components were transformed according to the Harris Kaiser independent cluster solution.

Results

The overall measure of sampling adequacy for the correlation matrix was .85, indicating that the eighteen items comprised in the Guttman sense an excellent psychometric sample. The lowest obtained individual measure of sampling adequacy was .77; the highest was .91.

This finding suggests that each of the items exhibited a substantial degree of domain relatedness. Three image components were retained in the solution. They are: Task Accomplishment, Employee Freedom and Management Control.

A clear pattern emerged. The first component, task accomplishment, was related to a series of actions specifically designed to force the group to accomplish its task. The second component, employee freedom, related to allowing group members freedom to meet their needs through task accomplishment. The third component, management control, was composed of a series of items related to the exercise of control over group members. The correlation between the components of task accomplishments and management control was .67. The second component, employee freedom, was virtually unrelated to the two initiating structure components.

Since the research thus far generated a factor, management control, which was unexpected, the researchers decided to probe management control needs of educators with a second population and a different instrument in an effort to confirm or disconfirm the existence of the factor. The second data set was comprised of item responses to a convenience sample of 64 teachers drawn from the Central Florida area. Each teacher was asked to respond to nine items of the School Child Control subscale of the Val Ed (Educational Values) questionnaire. Val Ed explores the relationships of student, teacher, administrator and community through three variables, affection, inclusion and control.

Results

The data was manipulated in order to produce descriptive statistics. For the sample of 64 teachers, the School Child Control subscale mean was 4.8, Mod 4, median 5, Range 2-8 (6) and standard deviation 1.40. The normative mean published for this subscale was 2.5 (Pfeiffer and Heslin, 1973). Therefore the sample mean for teachers in this research was nearly two times that of the normative mean.

Conclusions

The first part of this research project clearly suggests the presence of three-factor leadership behavior in educational organizations, a concern for task accomplishment, employee freedom and management control. This very clear set of three factors led the researchers to verify the presence of a value for management control in classrooms by teachers. The School Child Control subscale of the Val Ed instrument was used. The results of the survey confirmed the presence of a high value for management control. While this was expected, the magnitude of desired control was not expected. Also not expected was the range of desired management control within the group surveyed.

Implications

This research suggests five factors which educators might address. First, it is more functional to behave consciously than unconsciously. Knowing of the existence of three rather than two factors of leadership, teachers may become more accepting of control of students as legitimate behavior. Secondly, preservice teachers should be made aware of power and control as inherent in teaching so that they might assimilate these into their value systems. Third, if administrators were conscious of the implications of three-factor leadership, they might recruit teachers who are willing to exercise control and power over their subordinates and share control and power with their colleagues and superordinates. Such a change of expectancies would cause a fourth concern, a change in school norms. That is, each person in the school would be given enough freedom so that each might do the job when objectives were made clear (Likert, 1967). When norms change, a fifth factor emerges in schools: discipline methods change.

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New Approaches To The Assessment Of Children's Intelligence

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The professional literature related to the areas of educational and school psychology is replete with the perceived shortcomings of standardized intelligence tests. Many researchers have noted that intelligence tests have lagged behind intellectual theory. A major criticism leveled against both the Stanford-Binet and the Wechsler Scales has been that these instruments have failed to incorporate relevant research findings within the areas of cognitive psychology, neuropsychology, and related disciplines. Such is not the case with the *Kaufman Assessment Battery for Children* (K-ABC), which is presently being standardized.

The K-ABC is a new, individually administered measure of both the intelligence and achievement of normal and exceptional children ages 2½ through 12½ years. The K-ABC covers the pre-school and elementary school years rather thoroughly, and is intended for use in all types of school and clinical settings.

Intelligence as defined by the authors of the K-ABC is "an individual's style of solving problems and processing information, and has a strong theoretical foundation in the domains of both neuropsychology and cognitive psychology" (Kaufman & Kaufman, 1981, p. 2). Although having an intensive theoretical basis, the K-ABC is not a neuropsychological test. The K-ABC does not attempt to measure where information is processed (right hemisphere vs. left hemisphere) but rather, how information is processed. Problem-solving ability is viewed separately from school-related ability. The simultaneous and sequential subtests do not contain traditional intelligence subtests such as arithmetic, vocabulary, and information. These types of subtests have been included in the achievement section of the K-ABC.

The Kaufmans wanted the tests to have easy rules, be easy to

administer, easy to score and child-oriented, have novel tasks and tasks which have little verbalization on the part of the examiner and on the part of the child, and have teaching items for each subtest. Each subtest has a teaching item. No child should fail an item because he/she did not know what was expected of him/her.

Preliminary research investigations with the K-ABC have been very promising. Favorable correlations with the K-ABC and other standardized measures of intelligence have been obtained. Table I present the correlation matrix of one such study (Mealor, Finn & Livesay, 1982) involving children enrolled in classes for gifted students. The correlations in Table 1 are similar to those found in other research.

Table I

Correlation Matrix for the S-B, O-LMAT and K-ABC Scales

S-B	O-LMAT	Simultaneous Scale	Sequential Scale	Total Functioning	Achievement Scale
S-B	.94	.40	.65	.53	.51
O-LMAT		.48	.64	.59	.50
Simultaneous Scale			.60	.96	.76
Sequential Scale				.81	.70
Total Mental Functioning Scale					.81
Achievement Scale					

The K-ABC is the only measure of intelligence which has incorporated the findings of the 1980 census in its standardization sample.

The K-ABC comprises 16 subtests, although a maximum of 13 is

administered to any particular child. In keeping with the developmental needs of children, the battery is shorter for very young children. The intelligence scale incorporates the *Sequential Processing Scale* (4 subtests) and the *Simultaneous Processing Scale* (7 subtests). The *Achievement Scale* is comprised of 5 subtests (see Table 2 opposite page).

Descriptions of the 16 subtests, and the age range for each, follow.

Sequential Processing Scale

Hand Movements (ages 2-6 through 12-5) – Performing a series of hand movements in the same sequence as the examiner performed them.

Memory for Numbers (ages 2-6 through 12-5) – Repeating a series of digits in the same sequence as the examiner said them.

Memory for Words (ages 3-0 through 12-5) – Touching a series of silhouettes of common objects in the same sequence as these objects were named orally by the examiner.

Photo Series (ages 5-0 through 12-5) – Placing photographs of an event in chronological order.

Simultaneous Processing Scale

Magic Window (ages 2-6 through 4-11) – Identifying a picture which the examiner exposes by moving it behind a narrow window; hence, the picture is only partially visiable at any one time.

Memory for Faces (ages 2-6 through 4-11) – Selecting from a group photograph the one or two faces that were exposed briefly.

Gestalt Closure (ages 2-6 through 12-5) – Naming an object or scene pictured in a partially completed "inkblot" drawing.

Table II

K-ABC Tests Administered to Each Age

	2½	3	4	5-6	7-12½
Simultaneous	Magic Window Memory for Faces Gestalt Closure	Magic Window Memory for Faces Gestalt Closure	Magic Window Memory for Faces Gestalt Closure	Gestalt Closure Triangles Matrix Analogies Memory for Places Overlapping Pictures	Gestalt Closure Triangles Matrix Analogies Memory for Places
Sequential	Hand Movements Memory for Numbers	Hand Movements Memory for Numbers Memory for Words	Hand Movements Memory for Numbers Memory for Words	Hand Movements Memory for Numbers Memory for Words	Hand Movements Memory for Numbers Memory for Words Photo Series
Achievement	Picture Vocabulary Famous Faces	Picture Vocabulary Famous Faces Arithmetic Riddles	Picture Vocabulary Famous Faces Arithmetic Riddles	Famous Faces Arithmetic Riddles Reading Decoding	Famous Faces Arithmetic Riddles Reading Decoding Reading Understanding

Triangles (ages 3-0 through 12-5) - Assembling several identical triangles into an abstract pattern that matches a model.

Memory for Places (ages 5-0 through 12-5) - Recalling the placement of pictures on a page that was exposed briefly.

Overlapping Pictures (ages 5-0 through 12-5) - Reproducing a picture of a scene by assembling cutout "stencils," one on top of another.

Matrix Analogies (ages 5-0 through 12-5) - Selecting a meaningful picture of an abstract design which best completes a visual analogy.

Achievement Scale

Picture Vocabulary (ages 2-6 through 4-11) - Naming the object pictured in a photograph.

Famous Faces and Places (ages 2-6 through 12-5) - Naming the well-known person, fictional character, or place pictured in a photograph.

Arithmetic (ages 3-0 through 12-5) - Demonstrating knowledge of numbers and mathematical concepts, counting and computational skills, and other school-related arithmetic abilities.

Riddles (ages 3-0 through 12-5) - Inferring the name of a concrete or abstract concept when given a list of its characteristics.

Reading (ages 5-0 through 12-5) - Identifying letters, reading words, and demonstrating reading comprehension by following commands that are given in sentences.

As can be seen from the above description, the K-ABC offers many unique and novel tasks which were designed to appeal to the developmental changes in interests and abilities for differing age groups. One of the major contributions of the K-ABC can be summed up by the following statement from the authors which states:

> ...that by understanding the processing or problem-solving strategies of children, and by measuring their strengths and weaknesses in these intellectual processes, educators are one step closer to providing effective educational instruction and intervention than if we continue to focus on the content of what children have already learned (Kaufman & Kaufman, 1981, p. 3).

The K-ABC includes intelligence and achievement in a single instrument utilizing the same normative group. This should help facilitate decision-making when ability-achievement comparisons are needed for the diagnosis of learning disabilities. The K-ABC will be available in Spring 1983 and promises to be a major advance in the measurement of children's intelligence.

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A Base For Maximizing Human Potential

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Many human beings who appear to be on the threshold of great careers, or those who have obvious talent, or those who have "something going" — and then lose it, are all subject to a host of simplistic solutions. Inadequate rewards, insufficient parental press, lack of spontaneous affection, rigidity of training, or character flaws are common rationalizations that are touted to explain wasted human potential. Another set of responses is offered in this overview of the *Diathesis Principle*.

The question of "How humans lose their potential" presumes that all have many talents, skills, and potentialities built in epigenetically. The human condition, in contrast with that of the deterministically controlled species, has the additional potential of constantly becoming – of self-choosing – self. The task of becoming is not epigenetically determined to the degree that it is not subject to reductionist forces both within and without each human. Those reductionist forces external to each diathesis are not the subject of this discussion; those reductionist forces which are within the realm of individual human responsibility and limit potential are. Essentially, there are identifiable maintenance skills that each individual utilizes to retain and build his or her potentialities. These maintenance skills can be identified within the four polarities of the Diathesis Principle: each human maintains equilibrium by processing stimulation from the cognitive, affective, psychomotor and axiological self (See Diagram I). Human beings lose their potential when the equilibrium of the diathesis is subject to excessive reductionist forces.

A sense of normalcy or adequacy is experienced when balance is maintained between the four variables of the diathesis - a form of open internal dialogue. A sense of despair and even suicidal tendency is experienced when the imbalance of the diathesis internal dialogue is severe enough. Because the diathesis balance is subject to internal

control, the power of enlightened self-consciousness is the necessary maintenance skill for adequate development of potential in a complicated and complex human society. When an enlightened internal dialogue is constantly occurring, the self is receiving rich and powerful awarenesses. Despair is the negative functioning of the diathesis dialogue. When the positive stimulation of a pole is trapped (within itself or one or two other poles), the quality of the experience takes on the behavioral characteristic(s) of shock, confusion, and atrophy. In severe cases of monomania, for example, the narcissistic ego willfully prevents internal dialogue from occurring. Other forms of fixations, both neurotic and psychotic, are states in which human potential is blunted or skewed by an incomplete diathesis dialogue. If the diathesis equilibrium is excessively skewed, then death in a cognitive, affective, axiological or psychomotor sense is the natural consequence (See Diagram II).

In the natural human condition, awareness of the imbalance in the person's diathesis is usually the springboard for remediation. Minor adjustments and monitoring of one's diathesis occur thousands of times per day. Self, and other, admonitions are usually sufficient to reestablish an adequate diathesis. Many though, through neglect or insensitivity, lose the maintenance ability and then are responsible for behavior that is just "not like him or her." Because the diathesis is more than merely the sum of the autonomous nervous system, it is constantly subject to the conscious will of each person. And it is through enlightened self-consciousness that an individual has the power to maximize his or her potential by developing a balanced diathesis. Steady-state peak performances are then only possible when the will is subject to the disciplined self-enlightenment of the diathesis.

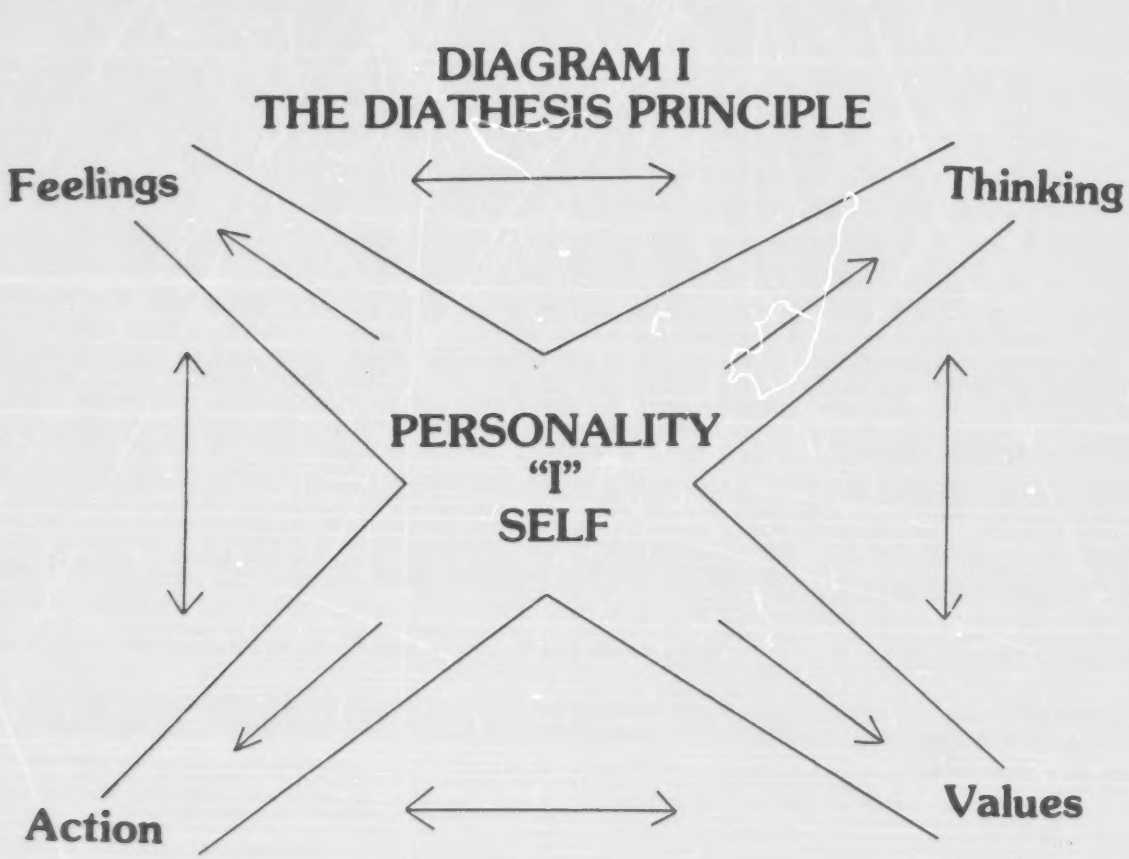
DIAGRAM I
THE DIATHESIS PRINCIPLE
Feelings
Thinking
PERSONALITY
"I"
SELF
Action
Values

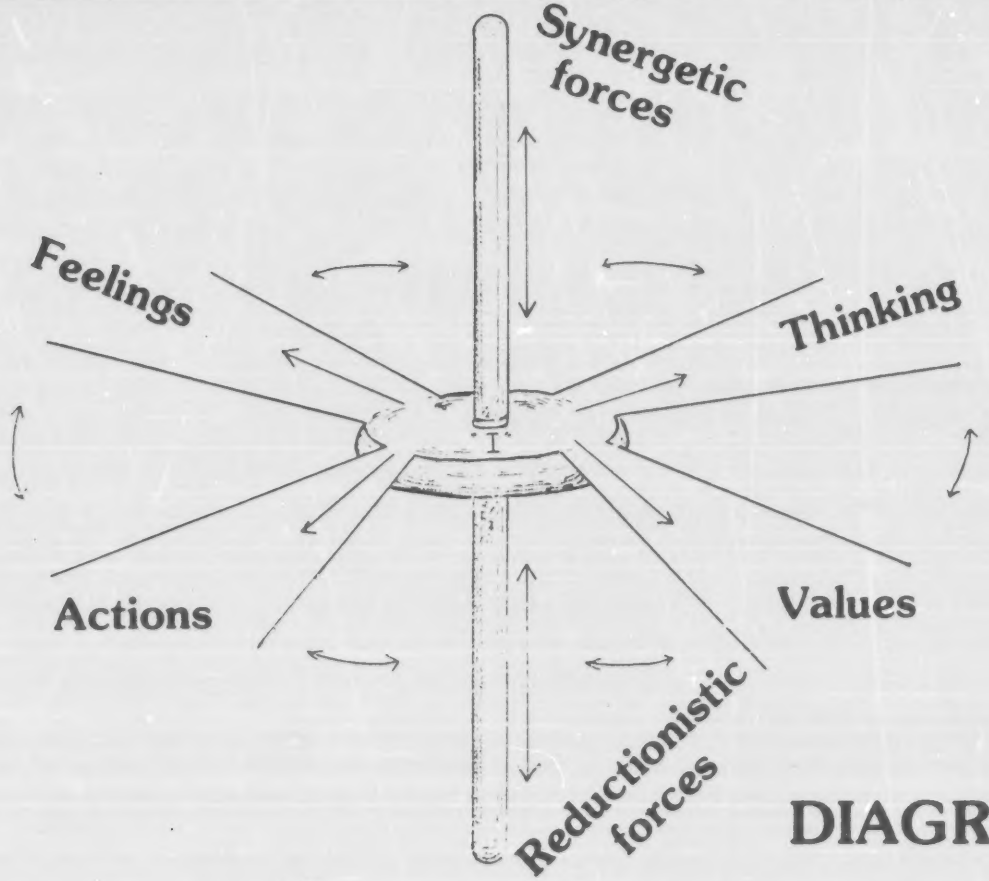
Synergetic forces
Feelings
Thinking
Actions
Values
Reductionistic forces

DIAGRAM II

Classroom Ethnography: The Experience and The Methodology

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The purpose of this paper is to describe an ethnographic research methodology as it was applied in two participant observation classroom studies. It is hoped that through this description the reader will gain an understanding of the basic nature and structure of ethnographic inquiry and develop a sense of the applicability of ethnographic methods to the scientific investigation of classrooms.

Our studies were conducted to fulfill the requirements for a graduate research course in ethnographic methodology. One study was done in a kindergarten and the other in a first grade classroom. The methodological framework of the course was based on Spradley's developmental research sequence as described in his useful introductory text *Participant Observation*. It is not our intention here to detail Spradley's research sequence, but rather to offer a general picture of ethnographic methods as we learned to apply them in classroom settings.

Ethnography is a descriptive interpretive research methodology first developed by cultural anthropologists. It was initially used by anthropologists to study "exotic" cultural groups through participant observation, that is by immersion in the culture of the people under study. Social scientists from other disciplines, including education, now utilize ethnographic methods to study groups within their own culture.

The goals of ethnographic inquiry are descriptive and analytic in nature. The researcher seeks to understand the cultural meanings which organize and direct the lives of individuals within a social setting. These cultural meanings include elements which are explicit and observable and elements which are tacitly held and therefore more difficult to uncover and understand.

Classroom ethnography is a relatively new application of anthropological research methods. The goals and methods as applied in the classroom are basically the same as would be applied in the study of any social setting. Participant observation studies of classroom cultures seek to illuminate the meaning structures (tacit and explicit) shared by the participants of those cultures. For example, one of our studies focused on the meanings kindergarten students assign to interactions with their peers. Through the use of observation and analysis, four "peer interaction systems" emerged. Of course, peer interaction is just one dimension of the complex social environment of the classroom. An anthropological approach to exploring the dynamics of classroom cultures offers a promising scientific tool for improved understanding of educational practice and effect.

Ethnographic methodology is cyclic rather than linear in nature. After the selection of an ethnographic project, a basic cycle of collection, recording, and analyzing ethnographic data is begun. Generally, the researcher starts with very broad questions about a social setting, makes widely focused descriptive observations to answer these questions, analyzes the record of the early observations, generates new, more narrowly focused questions, and begins the cycle again. In the remainder of this paper we will describe the initiation and cyclic processes of ethnographic methodology as applied to classroom research. We will discuss: (1) considerations important to beginning ethnography, (2) the collection and recording of ethnographic data, (3) the processes of ethnographic analysis, and (4) the writing of an ethnography. In each section, we will include references to our experiences doing ethnographic research in classrooms. Our intent is not to provide an exhaustive description of expectations prospective ethnographers might face, but to suggest the nature of this rigorous scientific approach and its applicability to educational research.

Beginning an Ethnographic Project

As the researcher prepares to undertake an ethnographic investigation into a classroom setting, several preliminary considerations are important: (1) What will be the scope and focus of the study? (2) What will be the location of the study? (3) What must be done to secure

necessary permission and access to this location? and (4) How can the requirements of the study be integrated with the needs and expectations of the participants to be observed?

Decisions about the scope of a study are based on the width of focus the researcher chooses in studying the classroom as an institutional unit which reflects the social patterns of other institutions, or it may be as narrow as defining the meanings participants give to particular classroom interactions, such as peer helping behavior. Along these lines, Hymes has identified three modes of ethnographic inquiry: comprehensive, topic-oriented, and hypothesis-oriented. In the classroom, an ethnographer taking a comprehensive approach would seek to document that total social environment of a classroom. A topic-oriented mode would select for study one or more distinct aspects of classroom life; for example, peer interactions or teacher's use of time. Hypothesis-oriented ethnographics would examine the viability of explanations generated to explain classroom social phenomena. Although the scope of the study may change as the research proceeds, consideration of this issue is important as researchers prepare to begin data collection.

Selecting and gaining access to classrooms which will provide rich ethnographic data related to the researcher's focus are critical preparatory functions. Selection should be based on a number of factors. Spradley suggests five: (1) simplicity, (2) accessibility, (3) unobtrusiveness, (4) permissibleness, and (5) frequently recurring activities. Most classrooms satisfy requirements for simplicity and frequently recurring activity. However, more careful attention should be given to questions of accessibility, unobtrusiveness, and permissibleness. Some school systems, individual schools, or individual teachers may be very reluctant to permit an unknown researcher to record the moment by moment unfolding of classroom activity. Gaining official permissions does not guarantee access to the social events required in a study. Researchers need to evaluate these factors as they select and seek access to classrooms.

Our experience suggests that gaining permission and access to classrooms can range from being a trivial, almost automatic process, to being an arduous, on-going process where entry must be

renegotiated on every visit. It is important that the researcher identify and scrupulously follow district and/or school policies on classroom research. Further, it is suggested that teachers to be observed be given an accurate and detailed explanation of the proposed study. This explanation should address: the data collection processes, the amount of time to be spent in observation, the times of day observations will be made and the degree of participation the observer will have in the classroom, the way in which the observer will be introduced to the students and staff, and the manner in which the data will be used by the researcher. In addition, the researcher must establish a bargain with the teacher. This research bargain can range from providing occasional feedback about issues important to teachers,to sharing the completed report with them. The issue of how much the researcher shares with the teacher is an important ethical question not yet resolved by researchers. Our experiences represented the two extremes: one teacher wanted access to all data collected while the other never requested feedback and was satisfied with a brief oral summary of the final report. The research project may suffer or be halted in mid-stream if the researcher's expectations do not match those of the teacher. An early clarification of these expectations may prevent misunderstandings and lessen the likelihood of problems cropping up later in the study.

Collecting and Recording Ethnographic Data

Our goal as ethnographers was to develop an understanding of classroom cultures from the perspectives of their participants. This understanding does not come into the observer's consciousness through intuition, empathy or magic. Ethnography is a rigorous, disciplined,scientific inquiry based on the systematic collection and analysis of data. The gathering and recording of data is at the heart of the ethnographic process.

Ethnographic data include fieldnotes, tape recordings, pictures samples of student work or teacher plans, artifacts—in short, anything that documents the classroom situation. The major portion of the data collected is contained in the participant observer's field-notes. These fieldnotes represent a record of the ethnographer's observations and provide the data base upon which scientific understanding is founded.

Ethnographic observation is a skill which requires thoughtful preparation and practice. As researchers prepare for classroom observations, it is important that they clarify the questions that will guide them in their initial field work. Spradley suggests that the researcher's initial observations should be descriptive, that is he/she should identify and describe the major features of the scene. Appropriate questions at the first stage of classroom observation for example include: Who are the people in the setting? What are they doing? and What does the physical setting look like? It is helpful to keep a list of such questions handy throughout the observation period. The school environment is dynamic and one is overwhelmed easily by the myriad of events occurring rapidly and simultaneously in the typical classroom A list of predetermined questions provides focus for the observer and serves as a reminder of things to be done and attended to.

Making a descriptive record of a classroom environment is of central importance to the ethnographic process. Fieldnotes are the primary research record. Each observer develops his or her own techniques for translating observed situational events into a written protocol. The basic process, however, involves: (1) writing as detailed a description as possible while the event is taking place, (2) going back to the written record as soon after leaving the observation site as possible, to fill in important details, and (3) typing the expanded fieldnote account into a formal protocol.

Taking fieldnotes is an intellectually and physically demanding activity. It is also frustrating. A researcher doesn't always know what to record because so much is going on and can never be sure that he/she has recorded events in sufficient detail. It is necessary therefore to continuously refine one's focus. For example, one of us narrowed the parameters of his study by focusing on the interactions of kindergarten children. Even then, however, the task was demanding. While one event was being recorded, two other events were underway. With practice and patience, however, the neophyte researcher develops observational and speedwriting skills and begins to produce accurate fieldnotes that later can be expanded into data-rich protocols. We also found that after several hours of observing a particular event, such as a reading group, we recognized a repeating

pattern of activity within the event. Recognition of patterns frees the researcher to pursue observations of other events in the room with confidence that he/she is not missing opportunities for collecting significant new data.

During observations, the researcher records behavior as it occurs and attempts to record conversations in detail. Fieldnotes should use concrete language and must avoid making value judgments or subjective analyses. Of course,the researcher is constantly evaluating events and considering their meaning and significance for the actors in the scene. Such evaluations are useful and are recorded in a separate field journal but do not appear in the protocols. It is important that researchers pay close attention to the language actors use. Slang expressions, language patterns and conversations are recorded in detail and researchers take care not to mix their own language or substitute their own terms for the language of the group being studied. Again, the goal of the observation—recording process is to collect data which reliably represent the social situation under investigation. The emphasis must be on attending to and accurately recording events which, when systematically analyzed, will offer insight into the dynamics of the situation as it is experienced by its participants.

The process used to convert fieldnotes into formal protocols varies from one researcher to another. However, initial notes must be expanded while the events are still fresh in the observer's mind. The authors share the experience of sitting on fieldnotes too long and then staring at them hopelessly trying to recall the details of events which, although recorded in notes, had now lost all meaning for us. We learned to set aside as much time out of the field to "flesh out" our fieldnotes as we spent observing in the field. Ethnographic research is a time-consuming process. We also learned that it is advisable to work our fieldnotes into final shape on the same day of observation. Expanded fieldnotes are the basic data source of ethnographic analysis. The notes will be read, re-read, analyzed, classified, re-analyzed and photocopied. The typing of fieldnotes is a virtual necessity.

The Process of Ethnographic Analyses

Data analysis is an on-going process that begins after a few observations in the field and continues until a final research report is prepared. As we have mentioned, the major task of ethnographic research follows a cyclical pattern of asking questions, collecting data, analyzing data, asking more questions, collecting data, and so on. Each task is influenced by the task preceding it and influences the tasks which follow. More specifically, questions direct the course of data collection and from data analysis emerge new questions which serve to focus future data collection. Analysis is an on-going process in ethnographic research. Its function is to help the researcher discover questions and explanations. In order to know what to look for during the next observation period, the researcher must analyze protocols during each fieldwork phase. The analytical processes of ethnographic research lead the researcher from the details of social situations toward discovery of the cultural meanings that govern and make sense of those situations.

Analysis of protocols is a search for patterns in the cultural scene. The search begins with identifying the parts of social situations, moves toward discovering the relationship among those parts, and culminates in determining their relationship to the whole.

The first phase of analysis involves identifying categories of meaning, or what Spradley calls cultural domains. To identify domains, the researcher must spend time working with the protocols and reading (and re-reading) them with specific questions in mind. Such questions include the following: Are there *kinds of* things here? Are there *ways to do* things? *Parts of* things? *Reasons for* things? *Uses for* things? *Steps in* doing things? After reading through the protocols with one category in mind, such as "*kinds of* things," any number of domains might be discovered. Typical domains one might identify in the early stages of classroom observation include: "kinds of seatwork" (phonics ditto, math puzzle, handwriting worksheet, boardwork); "ways to praise students" (hug, smile, pat on back, compliment verbally); and "reasons for teacher anger" (students out of seats, students talk, students don't follow directions, students are inattentive). When a large number of domains have been identified,

the researcher begins to select a focus to guide the course of further fieldwork.

A number of factors may influence one's selection of a focus. In our studies, we recognized that several domains were related to each other and this relationship served to guide our future observations. For example, in one study there was clearly a relationship among "kinds of activities," "kinds of instruction," and "kinds of adult verbal behavior." These categories seemed to fall under a larger domain: "ways the press of time influences classroom life." This domain provided a focus that helped explain the meaning of class events.

The researcher makes use of these related domains by forming questions based on each. The purpose of questioning is to guide future observations. Questions based on the domains mentioned above included: What kinds of activities are going on here? What kinds of instruction are being used here? What kinds of adult verbal behavior are employed here? The researcher proceeds to look for as many answers to these questions as can be found.

As data collection continues, the researcher digs deeper into the cultural scene. While continuing to identify domains and to add depth to existing domains, the researcher also begins to examine the organization of domains by asking: What are the subsets of this domain and how do they relate to the whole? For example, in examining the domain we called "kinds of instruction," we identified several component domains, including "ways to teach the whole class," "ways to teach a small group," and "ways to teach individual students." The questions which are formed from this type of analysis are contrast questions which lead one to ask the general question: How are these things different? In the instance of different kinds of instruction, for example, one would ask: What are the differences between whole class instruction and small group instruction? These sorts of questions direct the researcher to look for the attributes of each domain. For example, in the "kinds of instruction" domain, the researcher might define whole class, small group, and individual instruction as different cultural categories. In so doing, the researcher might discover that certain attributes are shared by all kinds of instruction. Thus another domain is discovered: "characteristics of all instruction."

Thus far we have described how the analytical processes of ethnographic research lead one from asking general questions about the scene to asking specific questions about identified domains. The questions in turn serve to direct observations, beginning with broadly descriptive observations and moving toward more focused, selective observations. Although descriptive observations continue throughout the investigation, the emphasis shifts toward more and more selective observations.

The next level of analysis leads the researcher even deeper into the cultural scene. Its purpose is the discovery of a single theme or set of themes which tie the parts of the scene together and make sense of it as a cultural whole. The search for cultural themes is a search for meanings which recur across domains. It is a search for unity in what, up to this point in the analysis, has been a highly sequential process.

The search for themes may be undertaken in any number of ways, but we utilized essentially three strategies. The first entails a complete immersion in the data. This means spending more time with the data, reading through protocols, and looking over domains and spending less time in the field. It also means taking time to sit or jog, or swim and think about the scene as a whole. A second strategy is to look for relationships among the domains. This strategy merges with the first and is related to the third. The third strategy is to make a schematic diagram of all important domains. Such a diagram helps one to visualize the parts of the scene and to see relationships between parts. A diagram of the scene can be very helpful in organizing and directing the writing of the ethnographic report.

Searching for themes can be exhilarating, depressing, and maddening, almost simultaneously. We felt at times that we had discovered significant truths, and in the next moment that our truths were trivial or even false. The key to success seems to be spending time with the data. By doing so, one generates hypotheses which must be taken to the scene for confirmation or rejection. A useful strategy at this point is to look for evidence to disprove the hypotheses. When one actively searches for events which can *not* be explained by the hypothesized theme, and cannot find any such events, one can feel secure in having identified a theme which explains needs of the

cultural scene. Another theme verification strategy is to test the hypothesis on participants; in classroom studies this means talking to the teacher and students. Because cultural themes tend to be at the tacit level of knowledge, the teacher most likely cannot express them if asked directly. However, the teacher can recognize underlying themes described in terms of his or her own classroom. It is positively elating to hear a teacher say, "Yes, that's my classroom!" This sign of recognition provides evidence that the hypothesis has been confirmed.

One theme may not apply to every part of a culture, but it should link several domains. As mentioned before, a theme which integrated a number of domains in one study concerned the importance of time in the classroom environment. The theme might be expressed as follows: The only way to cover all the material students need in order to pass required tests is to adhere to a rigidly controlled timetable. This theme integrated a number of domains into a pattern of shared meaning. Discovery of the theme helped to explain classroom organization and teacher behavior. Had the study been longer, the theme would have contributed to an understanding of student life in his classroom.

Writing the Ethnography

To this point, the researcher has identified parts of the scene, the relationship among parts, and the relationship of parts to the whole. It is time to organize the data in preparation for writing. During the organizational stage, the researcher assembles a record of all the data that have been collected. This includes re-reading all protocols, listing all domains, listing all analyzed domains, listing themes, collecting maps of the scene and any other relevant materials. In preparation for writing, we continued to develop our schematic diagram. These grew into huge charts which represented the cultural scene. An important feature of these charts is the coding of illustrations for each item in each domain. This requires reading through protocols and developing a system which indicates where an illustration is located. For example, if it has been discovered that a characteristic of instruction is that it is rule-oriented, there must be examples of this in the data. The report writing process will be facilitated if examples can be readily located.

Once data are carefully organized, the writing of an ethnography proceeds much like the writing of other reports. The central message or theme is presented early, and the parts of the scene are examined as they relate to the theme. The process involves a constant shifting from general to particular. This is why coded illustrations are so helpful. General statements about the cultural scene must be supported by specific examples from the protocols.

During the writing process there is a tendency to dramatize the scene beyond the scope of the data. To avoid exaggerations it may be useful to imagine that the classroom teacher is present, looking over the writer's shoulder as the description of his or her classroom unfolds. Although the goal is to accurately analyze the cultural scene, the writer must also recognize that he or she owes something to the participants. One must recognize that the goals, values, and desires of participants may not be the same as those of the researcher. Individuals who allow researchers to pry into their lives for hours on end deserve to have their privacy and their dignity respected and protected. The writer owes it to participants to maintain their anonymity and to honor the research bargain made prior to the study. If this included sharing the ethnography with participants, researchers might incorporate their reactions and comments into the report itself.

In Conclusion

Educational research has been criticized in some quarters for aligning itself so closely with quantitative "experimental" methodology. The argument runs that in order to gain the control necessary to generate statistically significant results, either artificial "laboratory" environments must be established or variables under consideration must be narrowly defined, leaving other important variables virtually ignored. It is not our position that experimental research is an inappropriate or ineffective methodology when applied to educational questions. On the contrary, we would suggest that many questions are most efficiently explored quantitatively.

It is our view that there is no inconsistency in advocating the utilization of experimental and qualitative approaches. We believe that ethnography offers a valuable tool to educational researchers.

Ethnographic methodology provides a vehicle for exploring many questions which are difficult to approach from a quantitative perspective.

Ethnography allows for systematic scientific investigation of school environments as they are interpreted by and acted upon by the participants. Unlike quantitative methodology, variables are not isolated and manipulated by forces external to the classroom participants. The environment itself becomes the focus of the investigation. The "wholeness" of the classroom culture, the interrelatedness of social patterns active in classrooms, and the pervasive influence of tacit social lessons learned through the experience of schooling are examples of important research areas which seem unapproachable by other than qualitative means.

The questions facing educators are many and complex. In describing ethnography and our experiences in applying it to classroom research, we have attempted to give the reader an overview of the methodology and a feeling for its application in classroom settings. We suggest that ethnographic methods offer a viable, rigorous, scientific perspective from which to approach educational questions.

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